Service Manual

Pioneer

TOYOTA

ORDER NO.
CRT2547

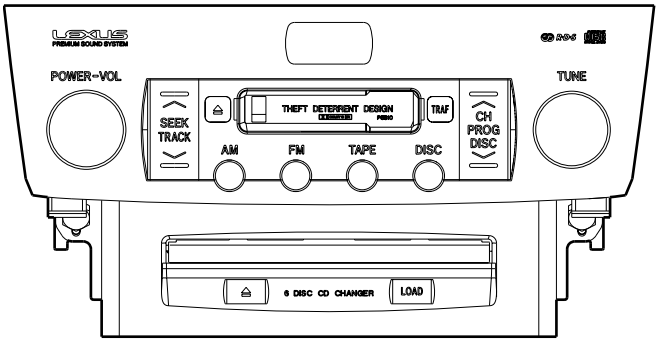
LEXUS LS430
AUDIO SYSTEM
HEAD UNIT

VEHICLE	DESTINATION	PRODUCED AFTER	TOYOTA PART No.	ID No.	PIONEER MODEL No.
LEXUS LS430	U.S.A., CANADA	August 2000	86120-50600	P6810	FX-MG8006ZT/UC
LEXUS LS430	U.S.A., CANADA	August 2000	86120-50760	P6810	FX-MG8006ZT-91/UC
LEXUS LS430	U.S.A., CANADA	August 2000	86120-50590	P6814	FX-MG8506ZT/UC
LEXUS LS430	U.S.A., CANADA	August 2000	86120-50750	P6814	FX-MG8506ZT-91/UC

Manufactured for TOYOTA
by PIONEER CORPORATION

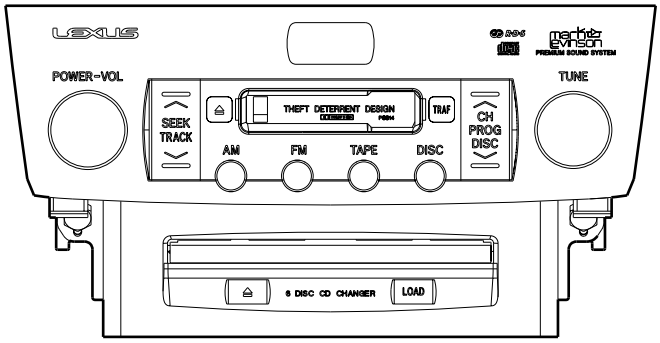
PUB. NO. CRT2547

FX-MG8006ZT/UC



ID No.P6810

FX-MG8506ZT/UC



ID No.P6814

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-631	CRT1640	2L	Cassette Mech. Module:Mech.Description, Disassembly
CX-890	CRT2376	G1	CD Mech. Module:Circuit Description, Mech.Description, Disassembly

● **Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.**

● **Supplementary model is identical to the original except for the addition of following items.**

Description	Part No.	
	FX-MG8006ZT-91/UC	FX-MG8506ZT-91/UC
Polyethylene Bag	CEG1026	CEG1026
Carton	CHA4120	CHA4120
Contain Box	CHL4122	CHL4123
Protector(TOP)	CHP2319	CHP2319
Protector(BOTTOM)	CHP2320	CHP2320

CONTENTS

1. SAFETY INFORMATION 3
2. EXPLODED VIEWS AND PARTS LIST 4
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM ...12
4. PCB CONNECTION DIAGRAM 32
5. ELECTRICAL PARTS LIST 54
6. ADJUSTMENT.....60
7. GENERAL INFORMATION 63
7.1 DIAGNOSIS.....63
7.1.1 TEST MODE.....63
7.1.2 DIAGNOSIS MODE 68
7.1.3 DISASSEMBLY 72
7.1.4 PCB LOCATIONS 77
7.1.5 CONNECTOR FUNCTION DESCRIPTION ..78
7.2 IC.....79
7.3 EXPLANATION.....84
7.3.1 SYSTEM BLOCK DIAGRAM 84
7.3.2 OPERATIONAL FLOW CHART 86
8. OPERATIONS AND SPECIFICATIONS.....87

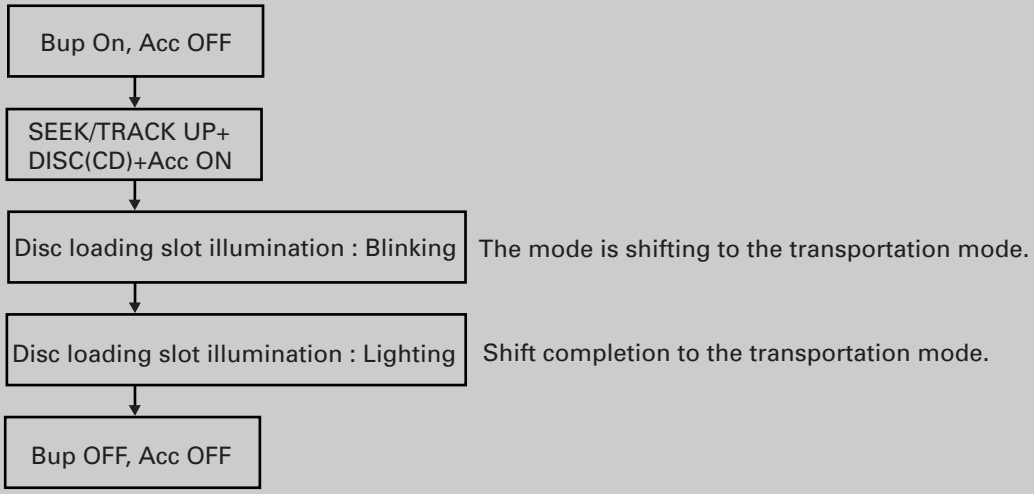
● **CD Player Service Precautions**

1. For pickup unit(CXX1313) handling, please refer to"Disassembly"(see page 72).
   During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).

2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.
3. Please checking the grating after changing the service pickup unit(see page 61).

● **When the Repair is Complete**

When the repair is complete, make the CD mechanism ready for transportation

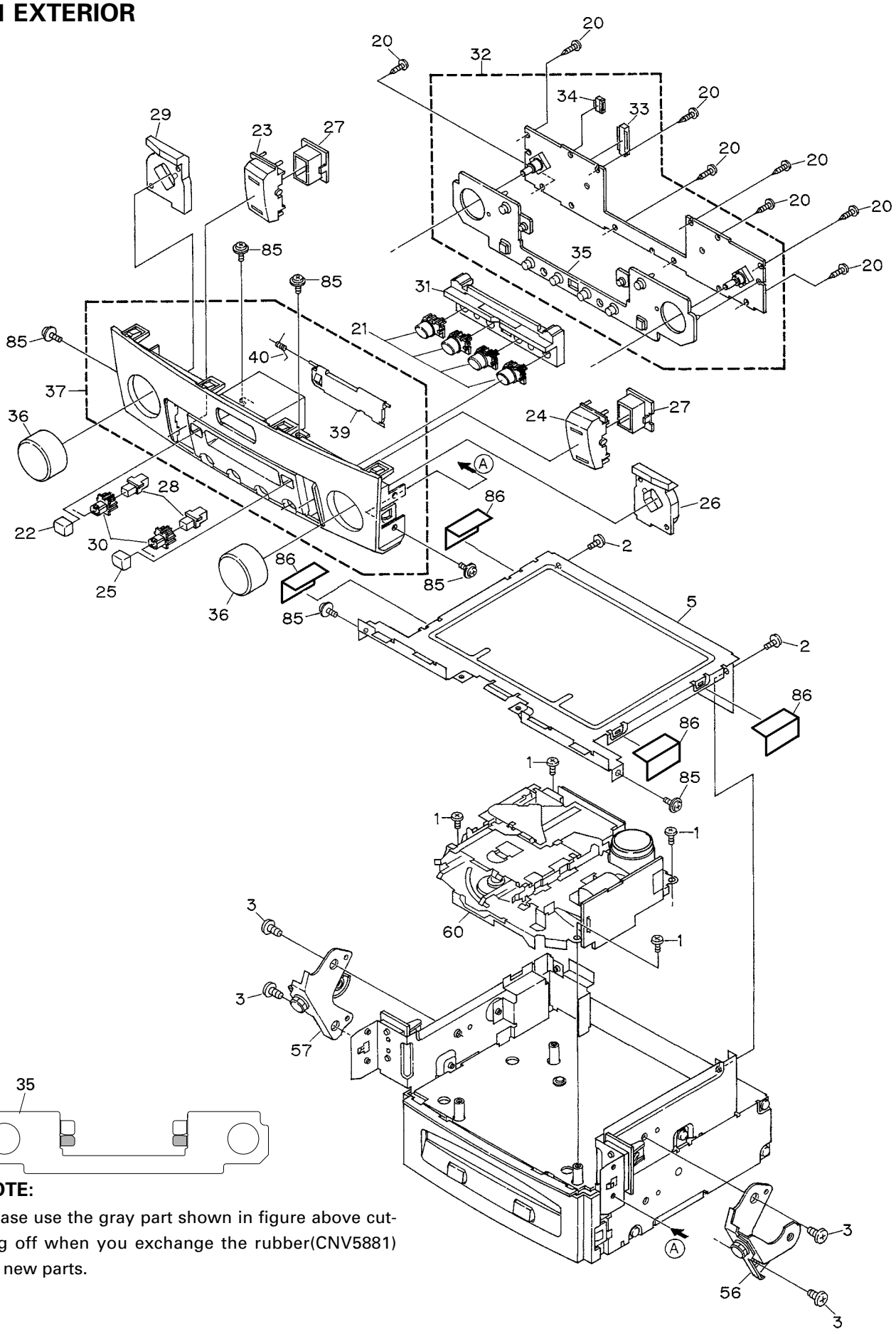

Bup On, Acc OFF
SEEK/TRACK UP+
DISC(CD)+Acc ON
Disc loading slot illumination : Blinking
The mode is shifting to the transportation mode.
Disc loading slot illumination : Lighting
Shift completion to the transportation mode.
Bup OFF, Acc OFF

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

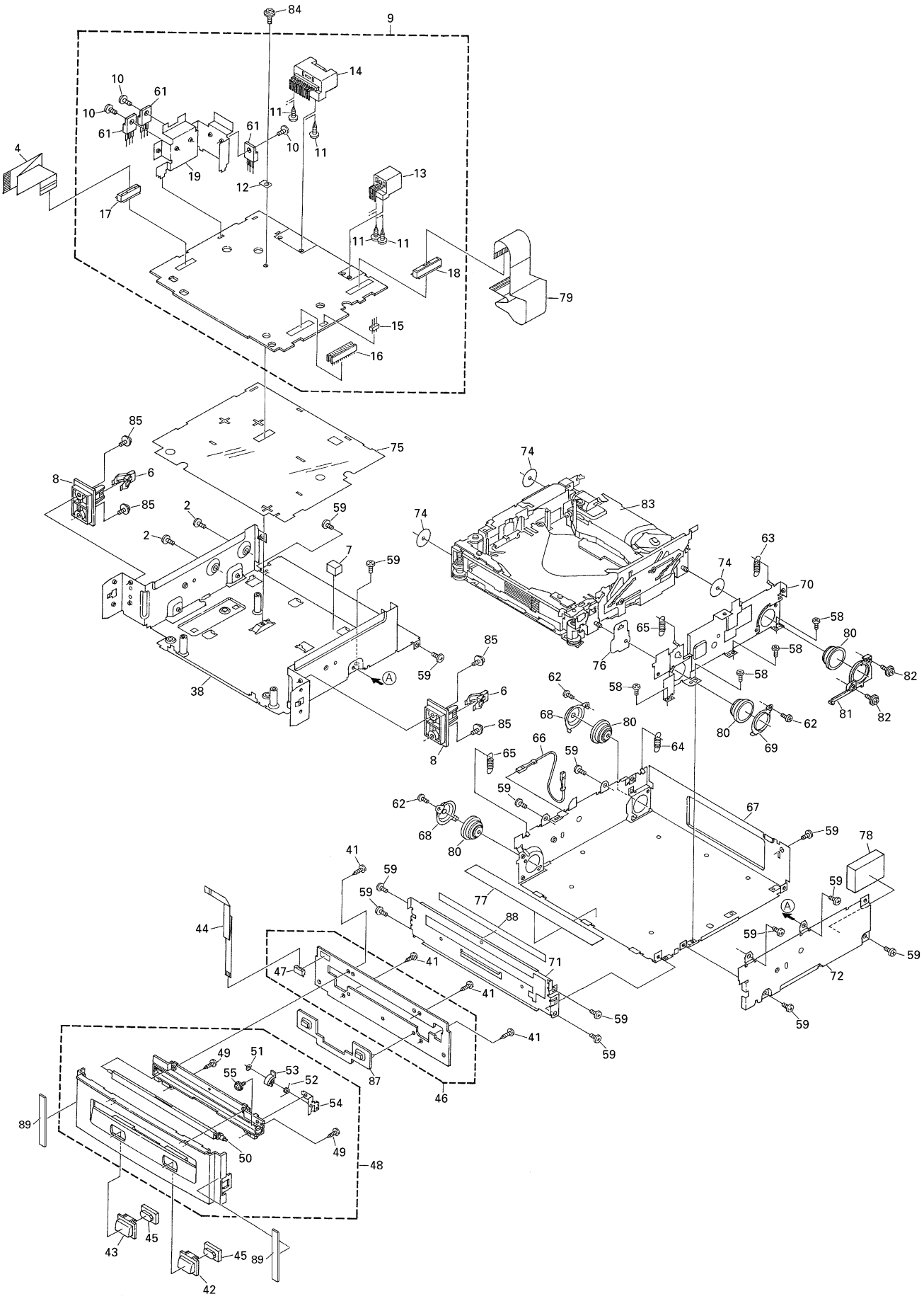
2. EXPLODED VIEWS AND PARTS LIST

2.1 EXTERIOR



NOTE:

Please use the gray part shown in figure above cutting off when you exchange the rubber(CNV5881) for new parts.



NOTE:

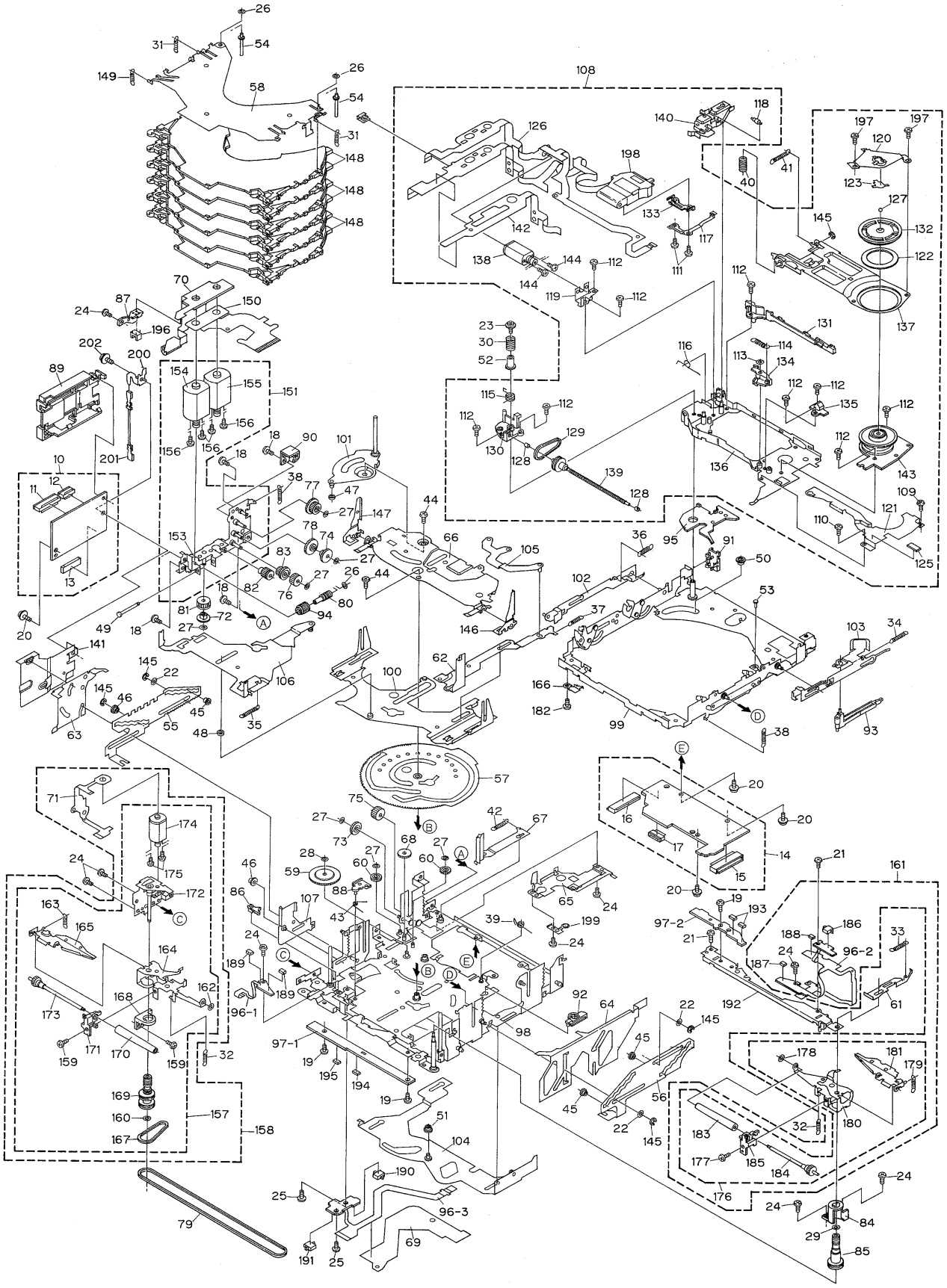
● Parts marked by "*"are generally unavailable because they are not in our Master Spare Parts List.

● Screws adjacent to ∇ mark on the product are used for disassembly.

● EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BMZ26P040FMC
	2	Screw	BMZ26P050FMC
	3	Screw	BMZ50P080FMC
		(FX-MG8006ZT/UC,FX-MG8506ZT/UC)	
	4	Connector	CDE6172
	5	Case	CNB2542
	6	90468-04191	CNC9048
	7	Cushion	CNM6917
	8	Guide	CNV6044
	9	Main Unit	CWM6847
	10	Screw	BMZ30P060FMC
	11	Screw(M3x6)	CBA1393
	12	Terminal(CN806)	CKF1059
	13	Connector(CN802)	CKM1315
	14	Connector(CN801)	CKM1322
	15	Plug(CN303)	CKS-291
	16	Connector(CN301)	CKS3568
	17	Connector(CN804)	CKS3751
	18	Connector(CN701)	CKS3930
	19	Holder	CNC8163
	20	Screw	BPZ20P080FMC
	21	Button(MODE)	CAC5958
	22	Button(EJECT)	CAC5960
	23	Button(SEEK)	CAC6356
	24	Button(CH)	CAC6357
	25	Button(TRAF)	CAC6431
*	26	Lighting Conductor Unit	CXB6916
	27	Holder Unit	CXB6898
	28	Lighting Conductor	CNV5683
	29	Lighting Conductor Unit	CXB6915
	30	Holder	CNV6039
	31	Lighting Conductor Unit	CXB6899
	32	Keyboard Unit	CWM6860
	33	Connector(CN902)	CKS3751
	34	Connector(CN903)	CKS4354
	35	Rubber	CNV5881
	36	Knob Unit	CXB3551
	37	Grille Unit	CXB6892
		(FX-MG8006ZT/UC,FX-MG8006ZT-91/UC)	
		Grille Unit	CXB6894
		(FX-MG8506ZT/UC,FX-MG8506ZT-91/UC)	
	38	Chassis Unit	CXB3549
	39	Door(FX-MG8006ZT/UC, FX-MG8006ZT-91/UC)	CAT2102
		Door(FX-MG8506ZT/UC)	CAT2169
		FX-MG8506ZT-91/UC)	
	40	Spring	CBH2427
	41	Screw	BPZ20P080FMC
	42	Button(LOAD)	CAC5968
	43	Button(EJECT)	CAC5969
	44	Connector	CDE6293
	45	Lighting Conductor	CNV6638
	46	SW Unit	CWM6872
	47	Connector(CN905)	CKS4354
	48	Grille Unit	CXB6927
	49	Screw	BPZ20P080FMC
	50	Door	CAT2151
	51	Washer	CBF1037
	52	Spring	CBH2339
	53	Gear	CNV6116
	54	Bracket Unit	CXB5254
	55	Screw	IMS20P030FMC
	56	86208-50010	CXB6031
		(FX-MG8006ZT/UC,FX-MG8506ZT/UC)	
	57	86207-50010	CXB6032
		(FX-MG8006ZT/UC,FX-MG8506ZT/UC)	
	58	Screw	BMZ20P020FMC
	59	Screw	BMZ26P030FMC
	60	Cassette Mechanism Module	EXK3885
	61	Transistor(Q809,811,812)	2SB1185
	62	Screw(M2x2)	CBA1250
	63	Spring	CBH2361
	64	Spring	CBH2365
	65	Spring Unit	CXB6850
	66	Connector	CDE6302
	67	Chassis	CNA2131
	68	Holder	CNC7477
	69	Holder	CNC7826
	70	Holder	CNC8160
	71	Holder	CNC8161
	72	Holder	CNC8162
	73	•••••	
	74	Sheet	CNM5981
	75	Insulator	CNM7141
	76	Sheet	CNM6318
	77	Insulator	CNM6410
	78	Cushion	CNM6927
	79	PCB	CNP5399
	80	Damper	CNV5120
	81	Holder	CNV5543
	82	Screw	IMS20P040FMC
	83	Mechanism Assy(Service)	CXX1430
	84	Screw	ISS26P050FMC
	85	Screw	ISS26P060FMC
*	86	Seal	CNM5714
	87	Rubber	CNV6596
	88	Spacer	CNM7140
	89	Spacer	CNM7179

2.2 CD MECHANISM



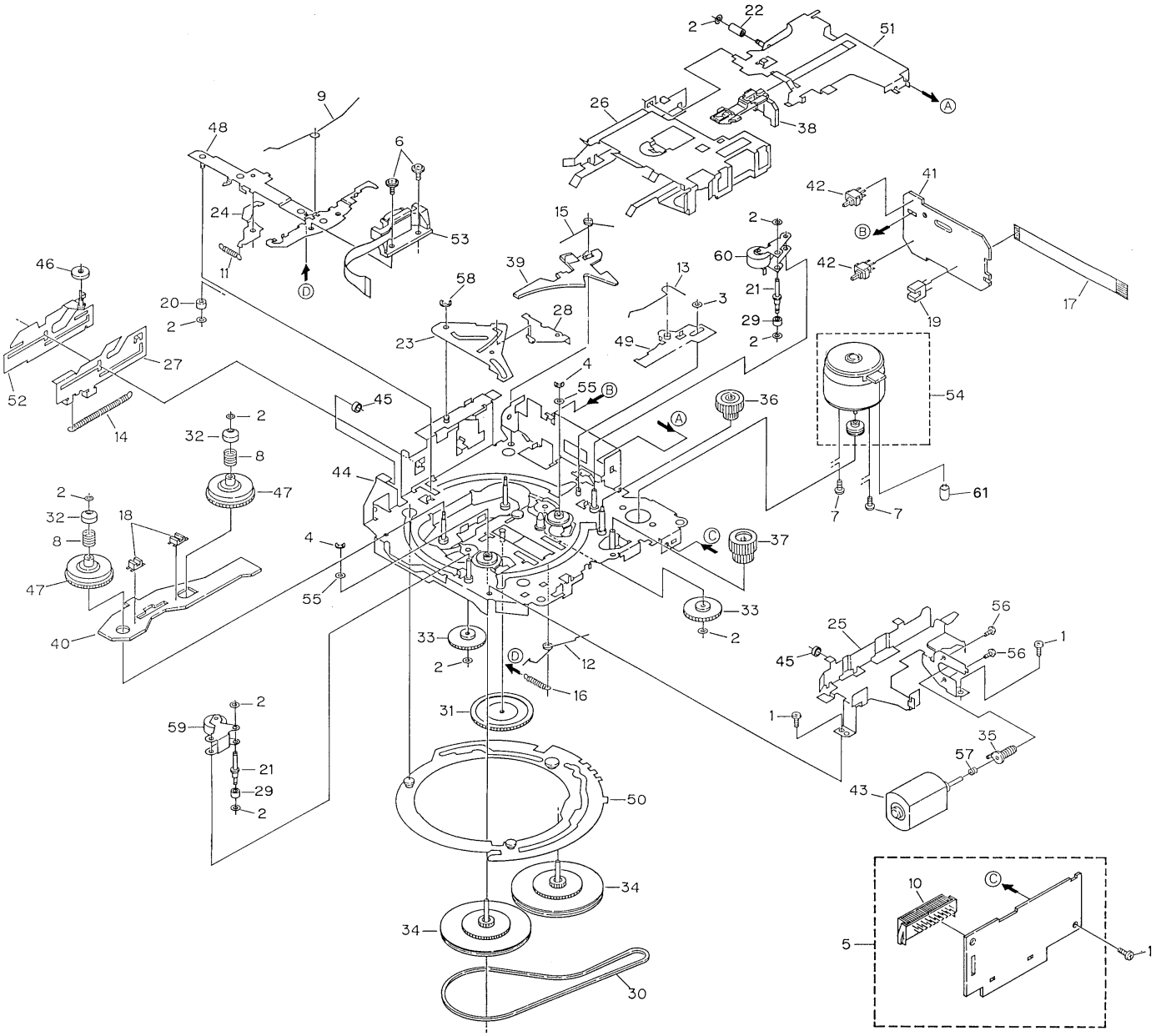
● CD MECHANISM SECTION PARTS LIST

Mark	No.	Description	Part No.
	1-9	●●●●●	
	10	CD Core Unit(Servo Unit)	CWX2421
	11	Connector(CN101)	CKS2764
	12	Connector(CN301)	CKS3966
	13	Connector(CN201)	CKS3991
	14	CD Core Unit(STS Unit)	CWX2422
	15	Connector(CN701)	CKS3989
	16	Connector(CN801)	CKS3989
	17	Connector(CN802)	CKS4054
	18	Screw	CBA1037
	19	Screw	CBA1041
	20	Screw	CBA1076
	21	Screw	CBA1250
	22	Washer	CBA1512
	23	Screw	CBA1452
	24	Screw	CBA1453
	25	Screw	CBA1479
	26	Washer	CBF1037
	27	Washer	CBF1038
	28	Washer	CBF1039
	29	Washer	CBF1064
	30	Spring	CBH2007
	31	Spring	CBH2271
	32	Spring	CBH2274
	33	Spring	CBH2014
	34	Spring	CBH2015
	35	Spring	CBH2016
	36	Spring	CBH2017
	37	Spring	CBH2290
	38	Spring	CBH2366
	39	Spring	CBH2064
	40	Spring	CBH2195
	41	Spring	CBH2196
	42	Spring	CBH2224
	43	Spring	CBH2250
	44	Screw	CBA1082
	45	Roller	CLA3154
	46	Roller	CLA3157
	47	Roller	CLA3159
	48	Roller	CLA3160
	49	Shaft	CLA3179
	50	Spacer	CLA3194
	51	Roller	CLA3248
	52	Bush	CLA3353
*	53	Shaft	CLA3469
	54	Shaft	CLA3693
	55	Steer	CNC7215
	56	Steer	CNC7216
	57	Cam	CNC8774
*	58	Holder	CNC7235
	59	Gear	CNC7236
	60	Gear	CNC8883
	61	Lever	CNC7243
	62	Lever	CNC7244
	63	Lever	CNC7245
	64	Lever	CXB4944
	65	Cover	CNC7441
	66	Holder Unit	CXB4946
	67	Lever	CNC9088
	68	Gear	CNC8140
	69	Sheet	CNM6840
	70	PCB	CNP5764
	71	PCB	CNP6010
	72	Gear	CNR1479
	73	Gear	CNR1481
	74	Gear	CNR1495
	75	Gear	CNR1501
	76	Gear	CNR1502
	77	Gear	CNR1540
	78	Gear	CNR1541
	79	Belt	CNT1080
	80	Worm Gear	CNV5046
	81	Gear	CNV5047
	82	Gear	CNV5048
	83	Gear	CNV5049
	84	Holder	CNV5056
	85	Pulley	CNV5058
	86	Arm	CNV5061
	87	Spacer	CNV5066
	88	Arm	CNV5189
	89	Cover	CNV5207
	90	Cover	CNV5424
	91	Cover	CNV5425
	92	Lever	CNV5427
	93	Arm	CNV5491
	94	Gear	CNV5519
	95	Holder	CNV5648
	96	Composite PCB	CNX3327
	97	Composite PCB	CNX2989
	98	Chassis Unit	CXB5940
	99	Frame Unit	CXB5806
	100	Lever Unit	CXB6026
	101	Arm Unit	CXB2704
	102	Lever Unit	CXB2708
	103	Lever Unit	CXB2709

Mark	No.	Description	Part No.
	104	Lever Unit	CXB4949
	105	Arm Unit	CXB2712
	106	Lever Unit	CXB4948
	107	Lever Unit	CXB2714
	108	Carriage Mechanism Unit(G1)	CXB4941
	109	Screw	CBA1041
	110	Screw	CBA1250
	111	Screw	CBA1362
	112	Screw	CBA1471
	113	Washer	CBF1038
	114	Spring	CBH2008
	115	Spring	CBH2009
	116	Spring	CBH2010
	117	Spring	CBL1335
	118	Roller	CLA3913
*	119	Bracket	CNC7228
	120	Guide Unit	CXB4417
	121	Cover	CNC7628
	122	Sheet	CNM6414
	123	Sheet	CNM5378
	124	•••••	
	125	Sheet	CNM5827
	126	PCB	CNP4978
	127	Ball	CNR1189
	128	Bearing	CNR1423
	129	Belt	CNT1079
	130	Holder	CNV5037
	131	Guide	CNV5040
	132	Clamper	CNV5042
	133	Rack	CNV5111
	134	Arm	CNV5579
	135	Holder	CNV5759
*	136	Chassis	CXB6025
	137	Arm Unit	CXB2705
	138	Motor Unit(M4 CARRIAGE)	CXB3178
	139	Screw Unit	CXB3179
	140	Lever Unit	CXB4450
	141	Bracket	CNC8584
	142	Spacer	CNM6345
	143	Motor(M5 SPINDLE)	CXM1120
	144	Screw	JFZ14P020FZK
	145	Washer	YE15FUC
	146	Arm Unit	CXB6052
	147	Arm Unit	CXB6053
	148	Tray Assy	CXB4307
	149	Spring	CBH2269
	150	Sheet	CNM7109
	151	Cam Motor Assy	CXB5240
	152	•••••	
*	153	Bracket Unit	CXB5201

Mark	No.	Description	Part No.
*	154	Motor Unit(M1 Cam Gear)	CXB3174
*	155	Motor Unit(M3 ELV)	CXB3175
	156	Screw	JFZ20P025FMC
	157	Loading Arm L Assy	CXB3171
	158	Loading Arm L Assy(Service)	CXX1415
	159	Screw	CBA1453
	160	Washer	CBF1038
	161	Loading Arm R Assy(Service)	CXX1457
	162	Washer	CBF1074
	163	Spring	CBH2136
*	164	Arm	CNC7241
*	165	Arm	CXB4449
	166	Holder	CBL1508
	167	Belt	CNT1079
	168	Holder	CNV5055
	169	Pulley	CNV5057
	170	Roller	CNV6209
	171	Guide	CNV5125
*	172	Bracket Unit	CXB5937
	173	Roller Gear Unit	CXB3176
*	174	Motor Unit(M2 LOAD)	CXB3177
	175	Screw	JFZ14P020FMC
	176	Loading Arm R Assy	CXB5839
	177	Screw	CBA1453
	178	Washer	CBF1074
	179	Spring	CBH2136
*	180	Arm	CNC7242
*	181	Arm	CXB5822
	182	Screw	JFZ20P014FMC
	183	Roller	CNV6209
	184	Roller Gear Unit	CXB3176
	185	Guide	CNV5126
	186	Switch(S885 MAX DETECT)	CSN1052
	187	LED(D883)	CL202IRXTU
	188	Photo-transistor(Q881)	CPT230SCTD
	189	LED(D891,892)	CL202IRXTU
	190	Switch(S887 CLAMP)	CSN1051
	191	Switch(S886 ELV HOME)	CSN1052
	192	Bracket Unit	CXB6086
	193	Photo-transistor(Q851,852)	CPT230SCTD
	194	Resistor(R856)	RS1/8S911J
	195	Resistor(R857)	RS1/8S821J
	196	Photo-interrupter(Q1)	RPI-221
	197	Screw	CBA1387
	198	Pickup Unit(Service)(P8)	CXX1313
	199	Spring	CBL1467
	200	Bracket	CNC8902
	201	Connector	CDE6302
	202	Screw	CBA1015

2.3 CASSETTE MECHANISM MODULE

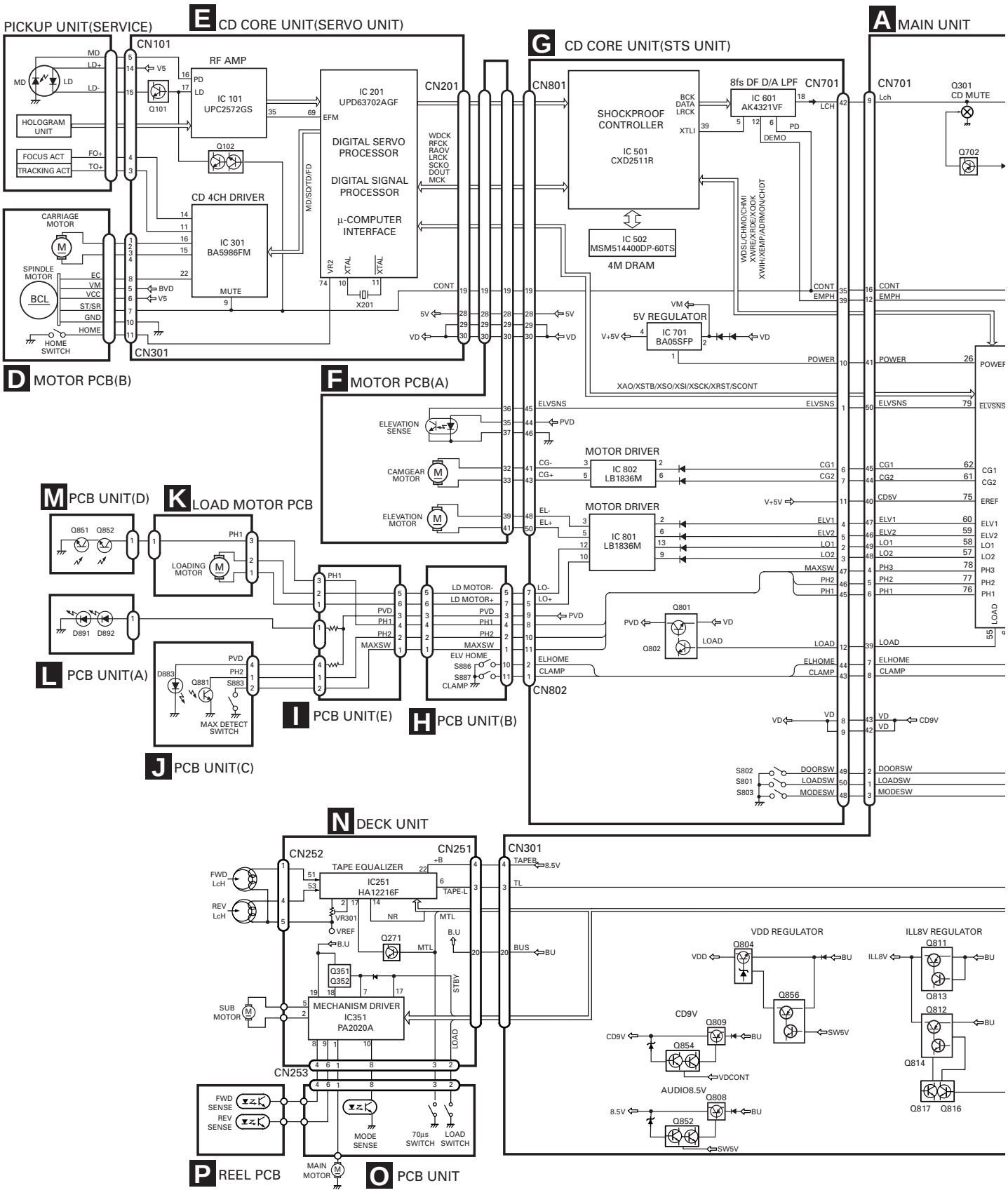


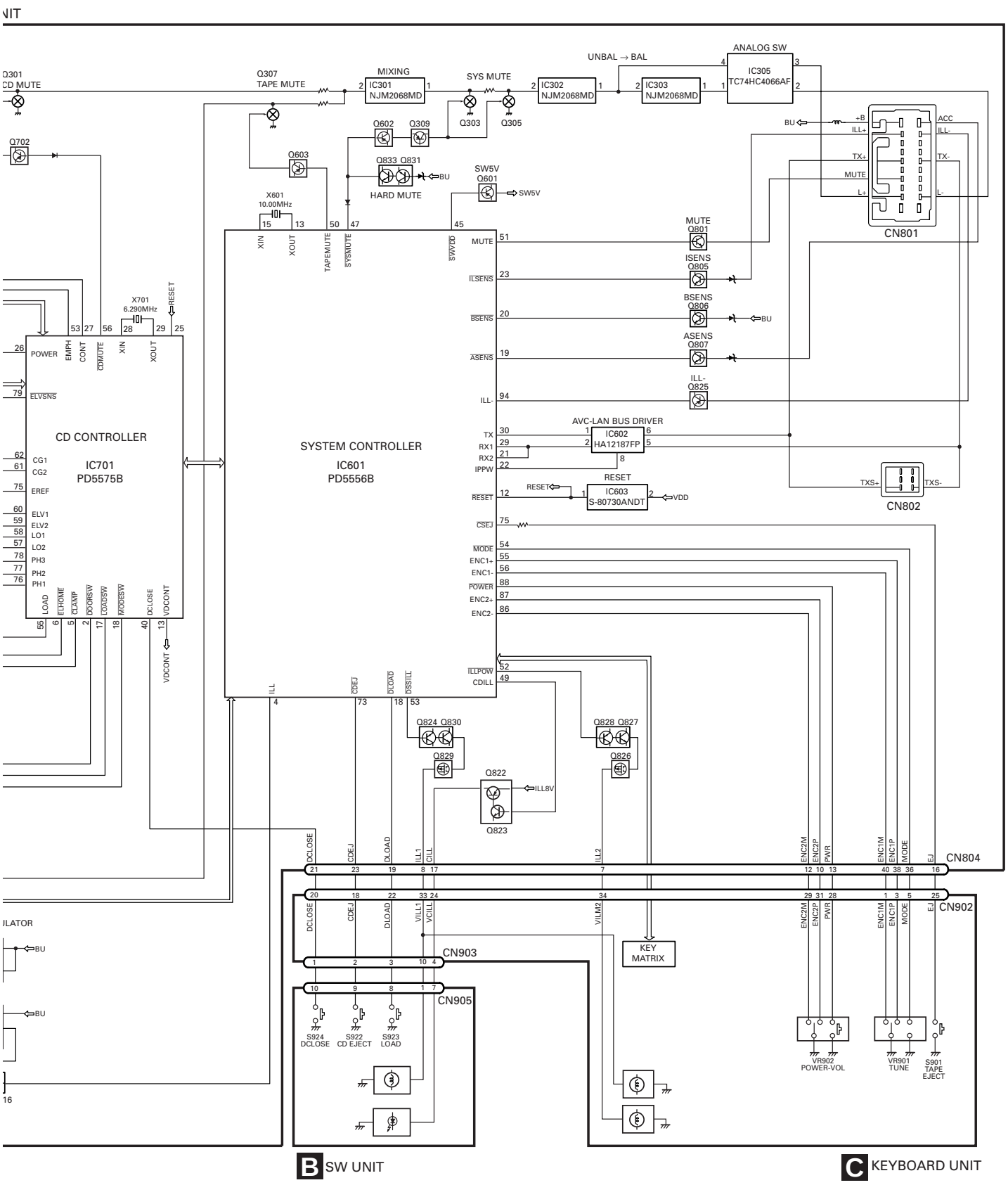
● CASSETTE MECHANISM MODULE SECTION PARTS LIST

Mark No.	Description	Part No.
1	Screw	BSZ20P040FMC
2	Washer	CBF1037
3	Washer	CBF1038
4	Washer	CBG1003
5	Deck Unit	EWM1027
6	Screw(M2x5)	EBA1028
7	Screw(M2x2.5)	EBA1037
8	Spring	EBH1531
9	Spring	EBH1589
10	Connector(CN251)	CKS3540
11	Spring	EBH1515
12	Spring	EBH1587
13	Spring	EBH1517
14	Spring	EBH1518
15	Spring	EBH1519
16	Spring	EBH1537
17	Cord	EDD1027
18	Photo-interrupter(EGN2,3)	EGN1006
19	Photo-interrupter(EGN1)	EGN1005
20	Roller	ENR1031
21	Shaft	ELA1362
22	Roller	ELA1348
23	Arm	ENC1490
24	Arm	ENC1397
25	Guide	ENC1519
26	Holder	ENC1516
27	Lever	ENC1448
28	Arm	ENC1488
29	Roller	ENR1023
30	Belt	ENT1027
31	Gear	ENV1347
32	Collar	ENV1508
33	Gear	ENV1350
34	Flywheel	ENV1500
35	Worm Gear	ENV1439
36	Worm Wheel	ENV1440
37	Gear	ENR1037
38	Lever	ENV1533
39	Arm	ENV1525
40	Gathering PCB	ENX1037
41	Gathering PCB	ENX1060
42	Switch(S1)(S2)	ESG1004
43	Motor Unit(M2)(SUB)	EXA1382
44	Chassis Unit	EXA1559
45	Tube	ENM1039
46	Roller	ENR1027
47	Reel Unit	EXA1560
48	Head Base Unit	EXA1434
49	Lever Unit	EXA1578
50	Gear Unit	EXA1545
51	Frame Unit	EXA1476
52	Lever Unit	EXA1439
53	Head Assy(HD1)	EXA1594
54	Motor Unit(M1)(MAIN)	EXA1499
55	Washer	HBF-179
56	Screw	JGZ20P025FNI
57	Spring	EBH1545
58	Washer	YE20FUC
59	Pinch Roller Unit	EXA1533
60	Pinch Roller Unit	EXA1532
61	Capacitor(C1)	CEAL4R7M35

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

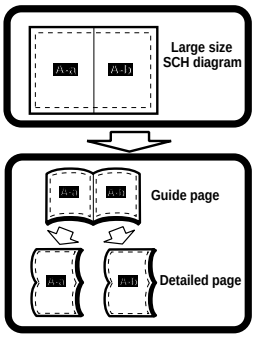


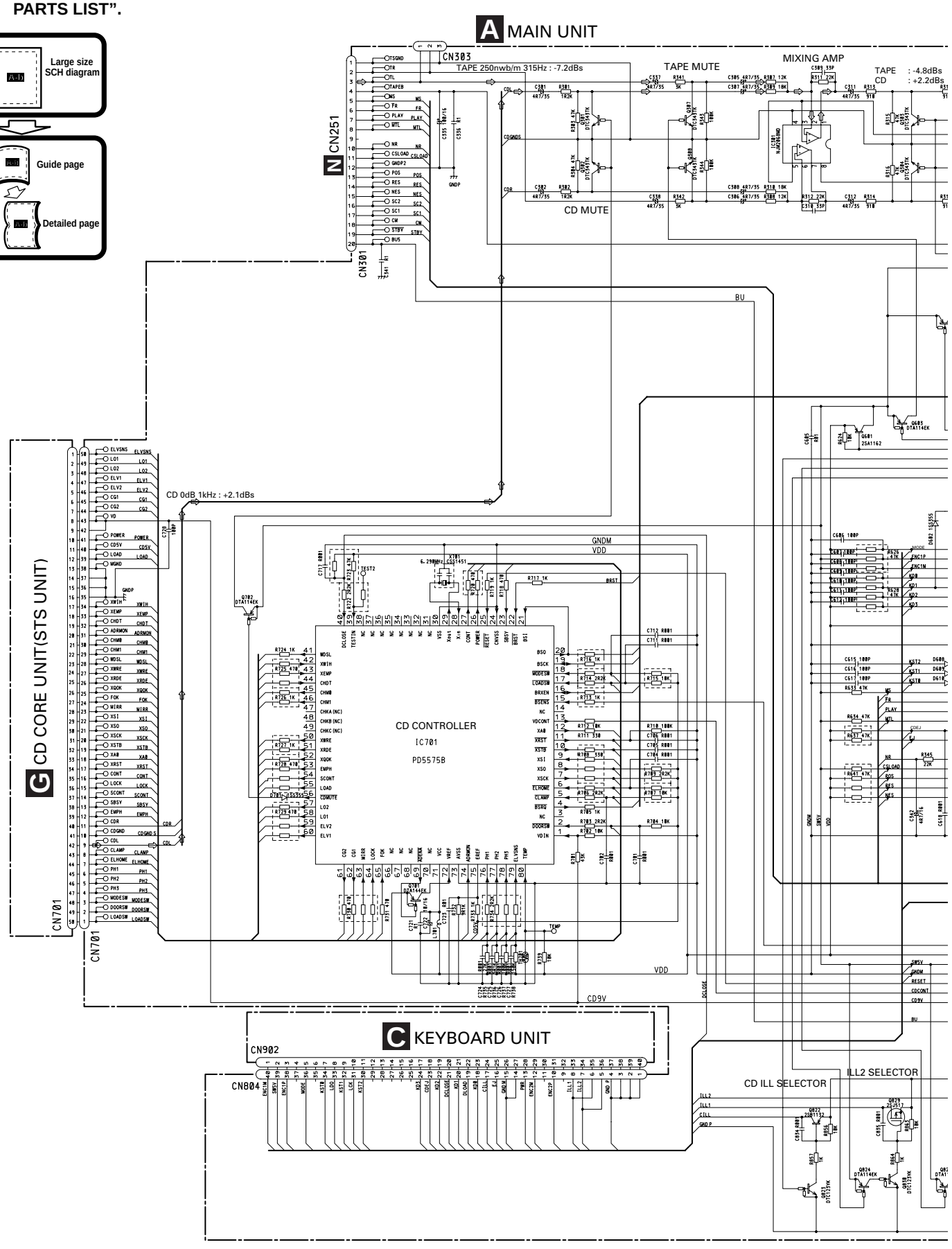

NIT
Q301
CD MUTE
Q307
TAPE MUTE
MIXING
IC301
NJM2068MD
SYS MUTE
IC302
NJM2068MD
UNBAL → BAL
IC303
NJM2068MD
ANALOG SW
IC305
TC74HC4066AF
Q303
Q305
Q602
Q309
Q603
Q833 Q831
HARD MUTE
SW5V
Q601
X601
10.00MHz
XIN
XOUT
TAPEMUTE
SYSMUTE
SWVDD
MUTE
Q801
ISENS
Q805
BSENS
Q806
ASENS
Q807
ILL-
Q825
CN801
ACC
ILL-
TX-
MUTE
L-
+B
ILL+
TX+
L+
BU
SW5V
Q702
X701
6.290MHz
RESET
POWER
EMPH
CONT
CDMUTE
XIN
XOUT
ELVSNS
CD CONTROLLER
IC701
PD5575B
CG1
CG2
EREF
ELV1
ELV2
LO1
LO2
PH3
PH2
PH1
LOAD
ELTHOME
CLAMP
DCOPSW
LOADSW
MODESW
DCLOSE
VDCONT
SYSTEM CONTROLLER
IC601
PD5556B
TX
RX1
RX2
IPPW
RESET
AVC-LAN BUS DRIVER
IC602
HA12187FP
IC603
S-80730ANDT
VDD
CN802
TXS+
TXS-
CSEJ
MODE
ENC1+
ENC1-
POWER
ENC2+
ENC2-
ILLPOW
CDILL
ILL
CDEJ
DLOAD
DSSLL
Q824 Q830
Q829
Q828 Q827
Q826
Q822
ILL8V
Q823
DCLOSE
CDEJ
DLOAD
ILL1
CILL
ILL2
ENC2M
ENC2P
PWR
ENC1M
ENC1P
MODE
EJ
CN804
CN902
VILL1
VCILL
VILM2
CN903
KEY
MATRIX
CN905
S924
DCLOSE
S922
CD EJECT
S923
LOAD
VR902
POWER-VOL
VR901
TUNE
S901
TAPE
EJECT
JLATOR
BU
16
B SW UNIT
C KEYBOARD UNIT

3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

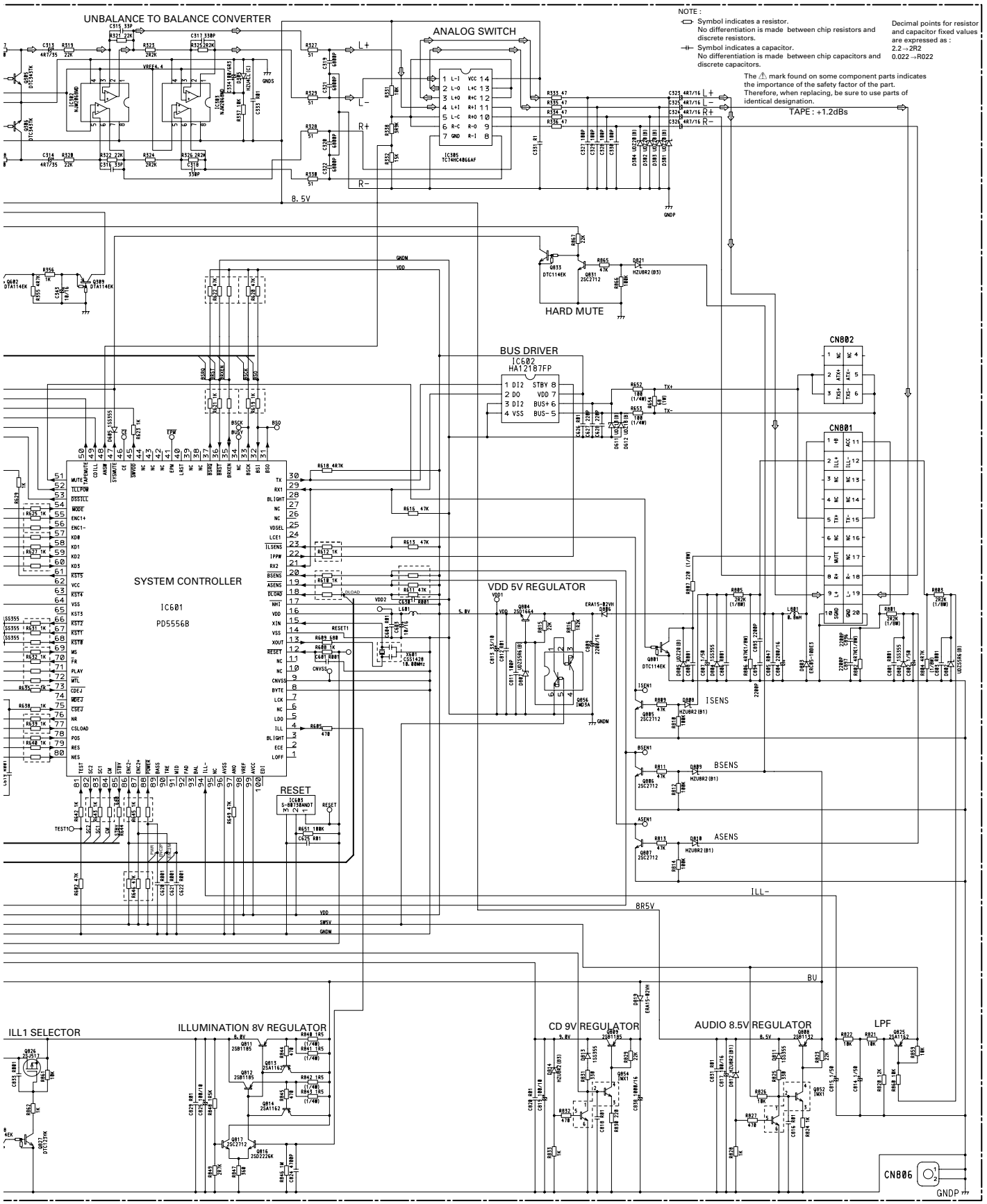
A-a

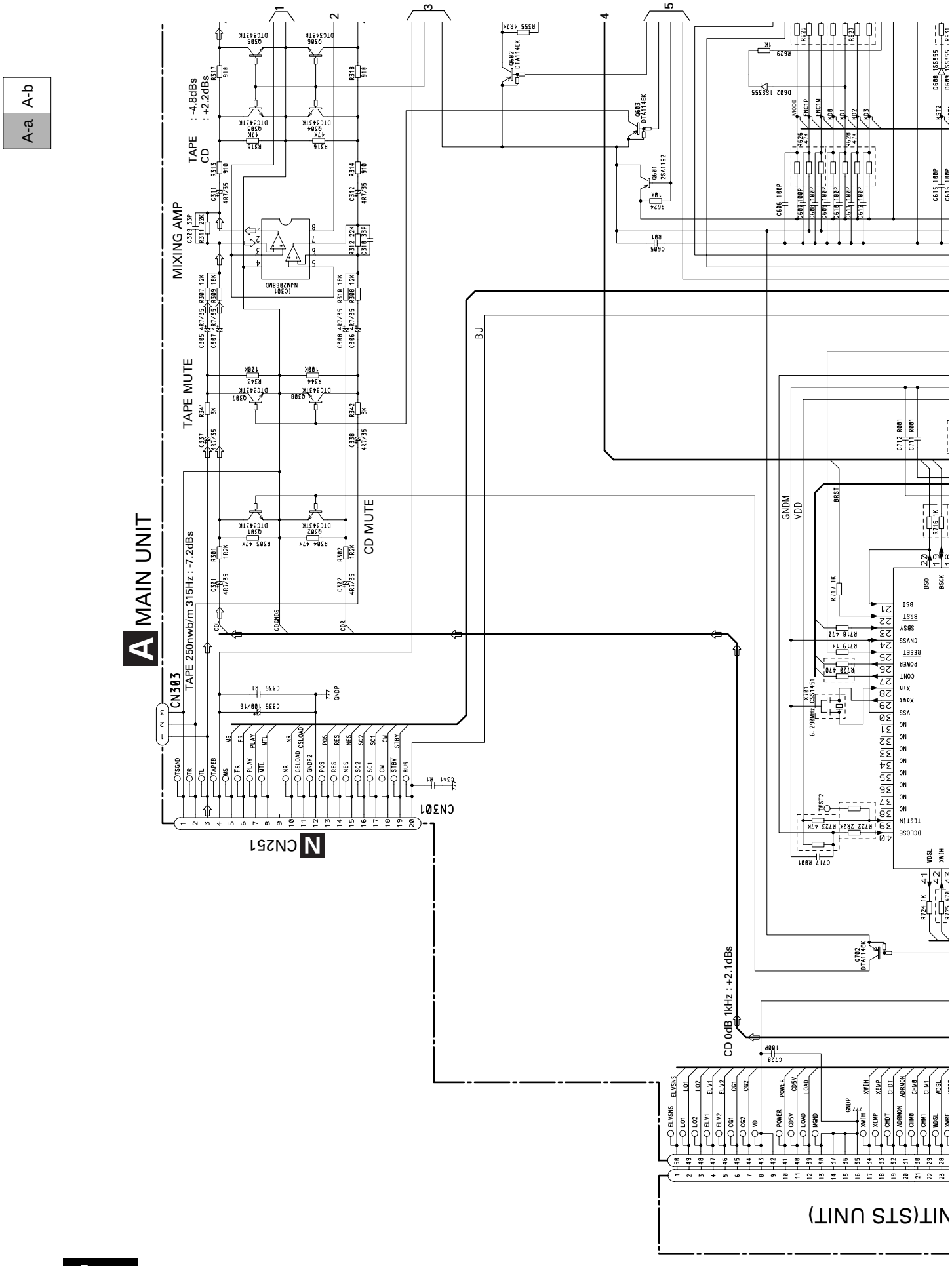
Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

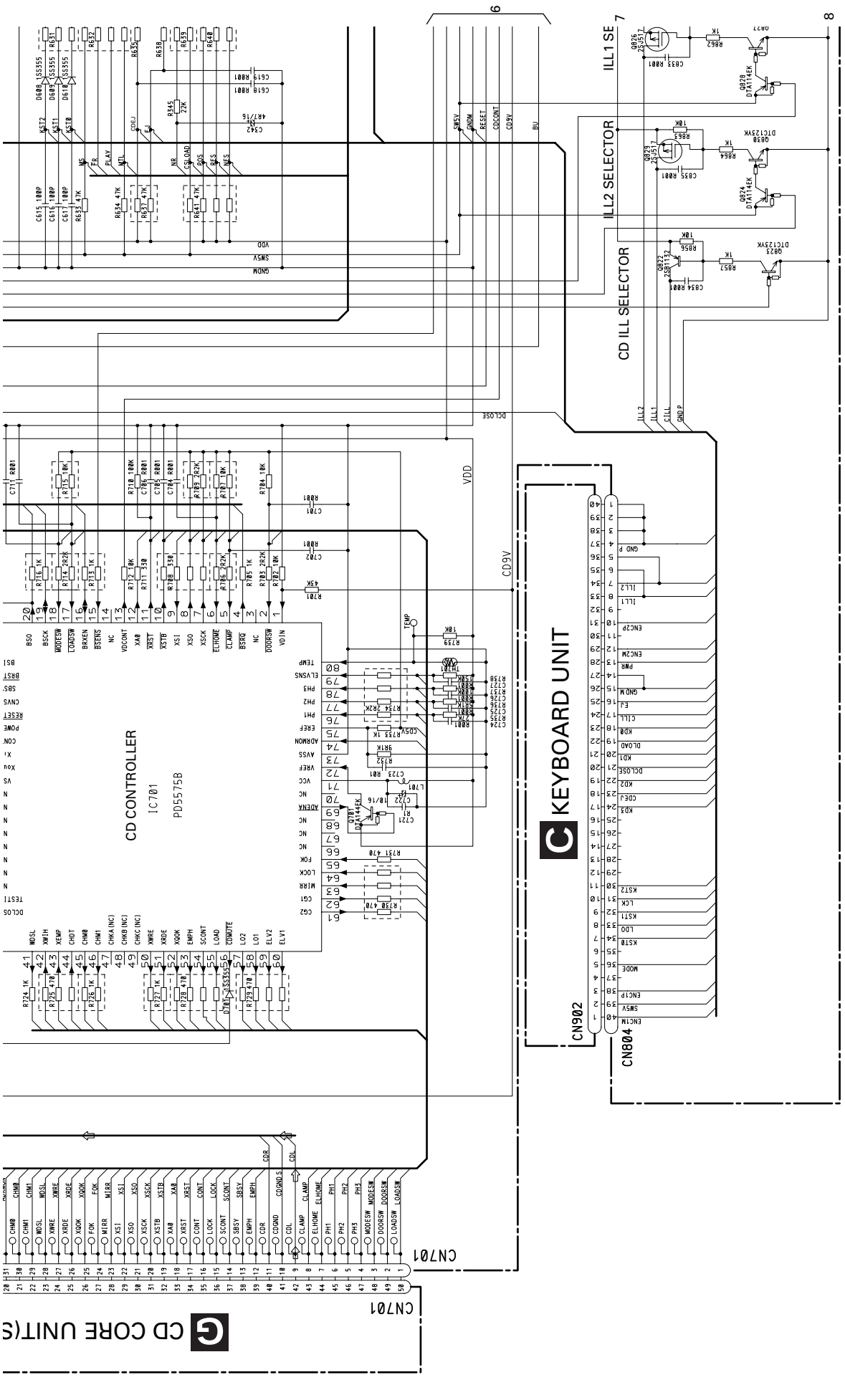




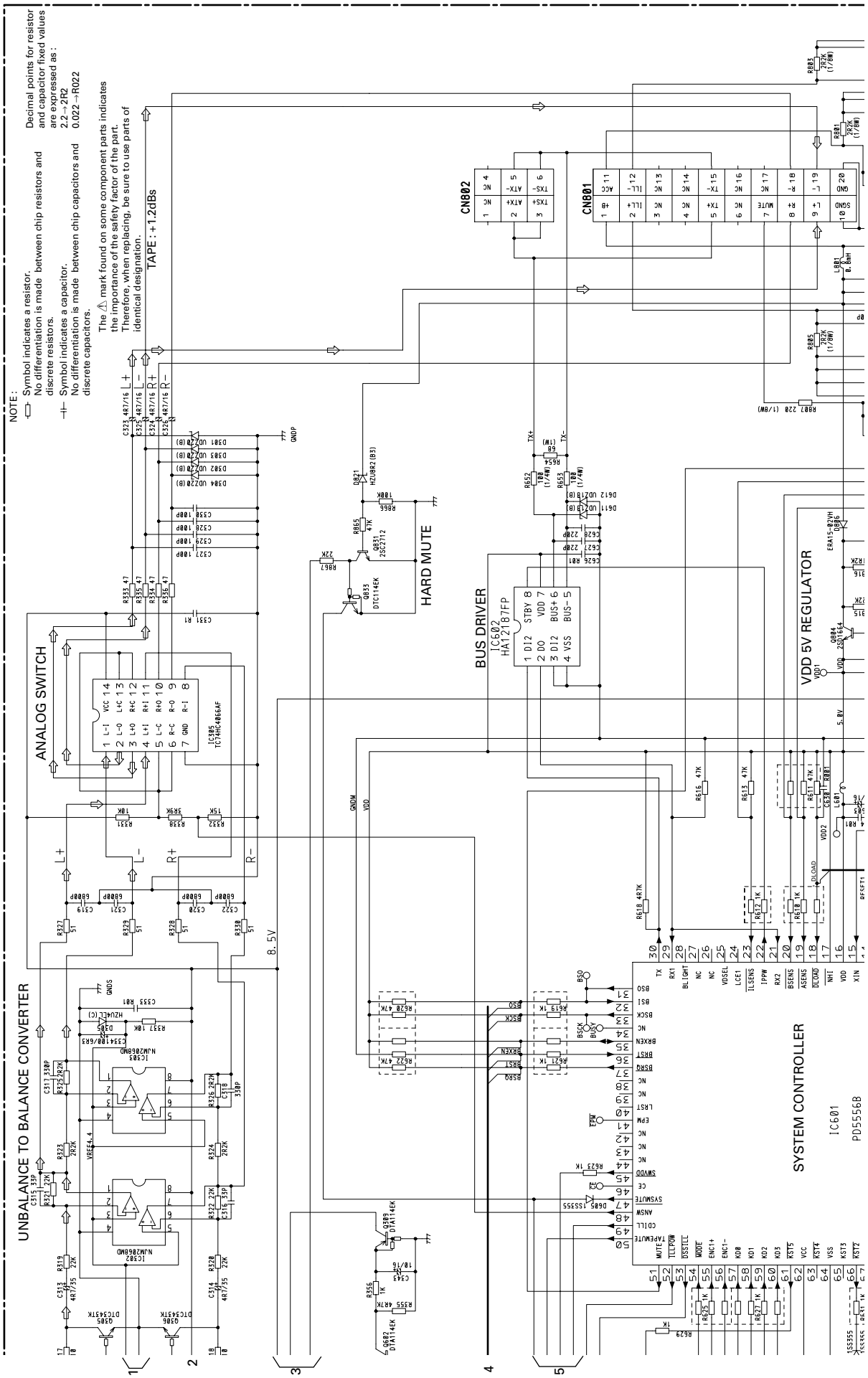
A-b

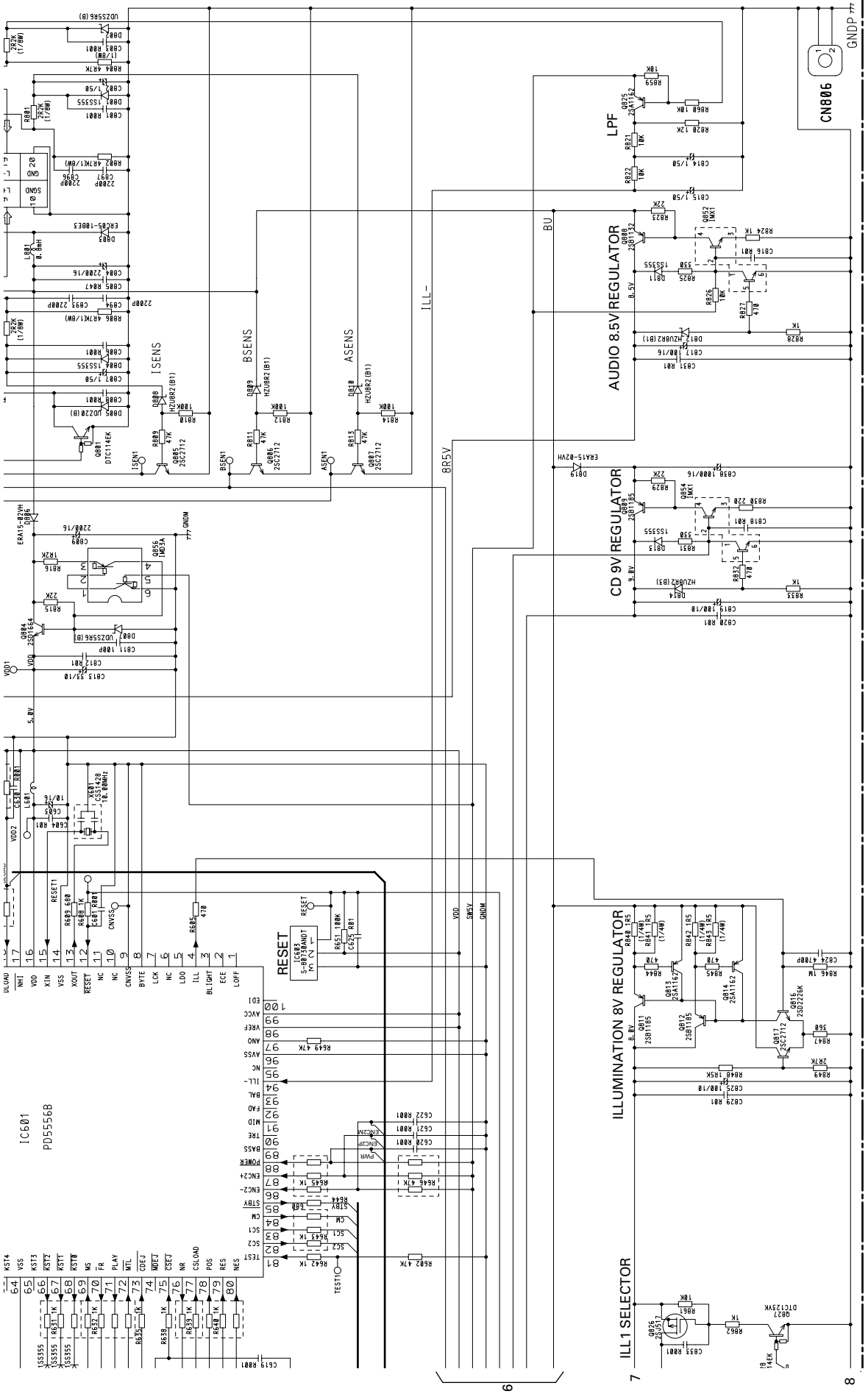

UNBALANCE TO BALANCE CONVERTER
ANALOG SWITCH
NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
Decimal points for resistor and capacitor fixed values are expressed as :
2.2 → 2R2
0.022 → R022
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
TAPE : +1.2dBs
HARD MUTE
BUS DRIVER
IC602
HA12187FP
SYSTEM CONTROLLER
IC601
PD5556B
VDD 5V REGULATOR
RESET
ILL1 SELECTOR
ILLUMINATION 8V REGULATOR
CD 9V REGULATOR
AUDIO 8.5V REGULATOR
LPF
ISENS
BSENS
ASENS
CN802
CN801
CN806
8.5V
8R5V
8U
ILL-
GNDP


A-b
A-a
A MAIN UNIT
MIXING AMP
TAPE MUTE
CD MUTE
TAPE : -4.8dBs
CD : +2.2dBs
TAPE 250nwb/m 315Hz : -7.2dBs
CD 0dB 1kHz : +2.1dBs
CN303
CN301
CN251
BU
GNDM
VDD
(STS UNIT)

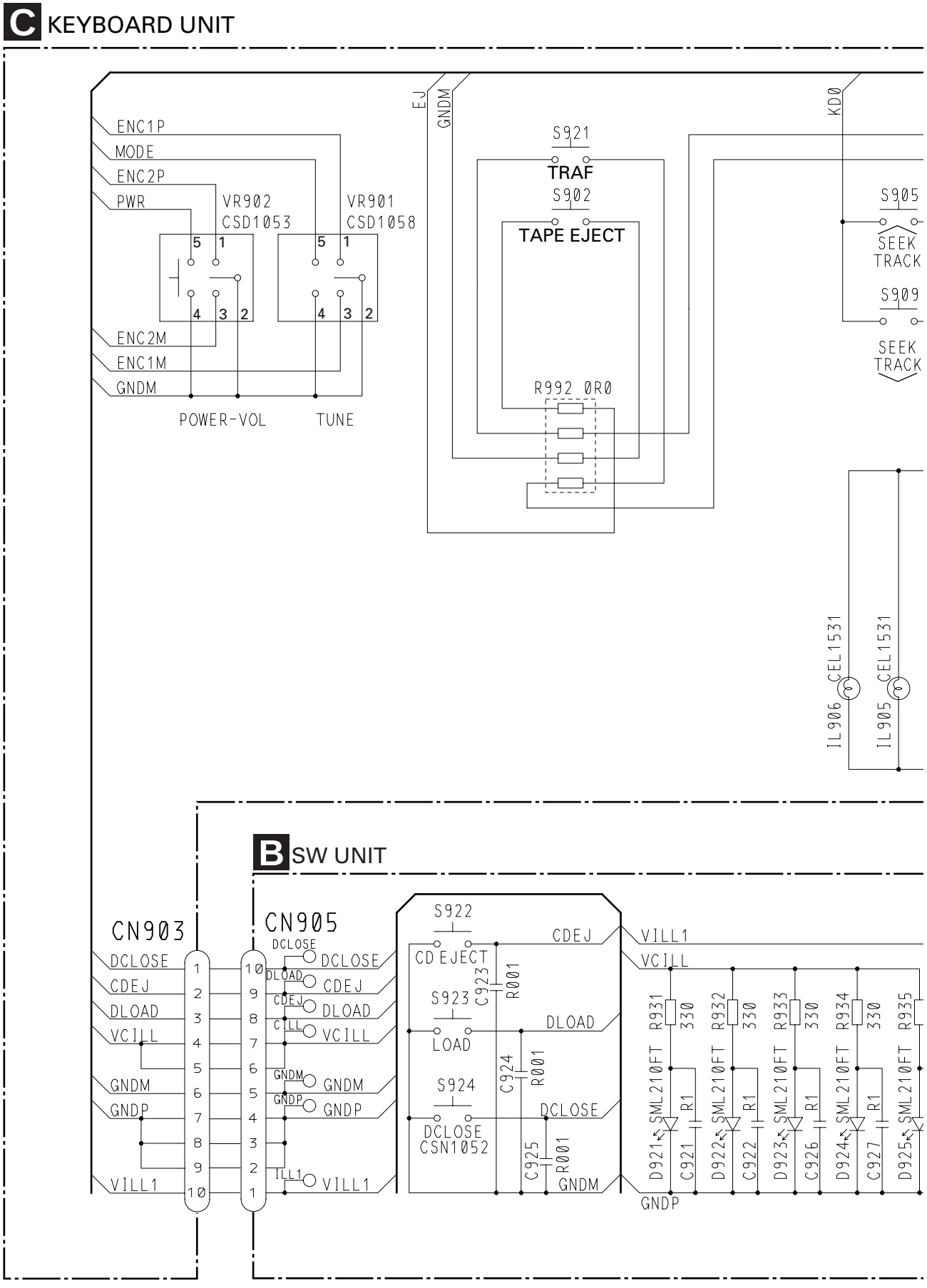

CD CONTROLLER
IC701
PD5575B
KEYBOARD UNIT
CN902
CN804
CN701
CD CORE UNIT(S
ILL1 SE
ILL2 SELECTOR
CD ILL SELECTOR
VDD
CD5V
DCLOSE

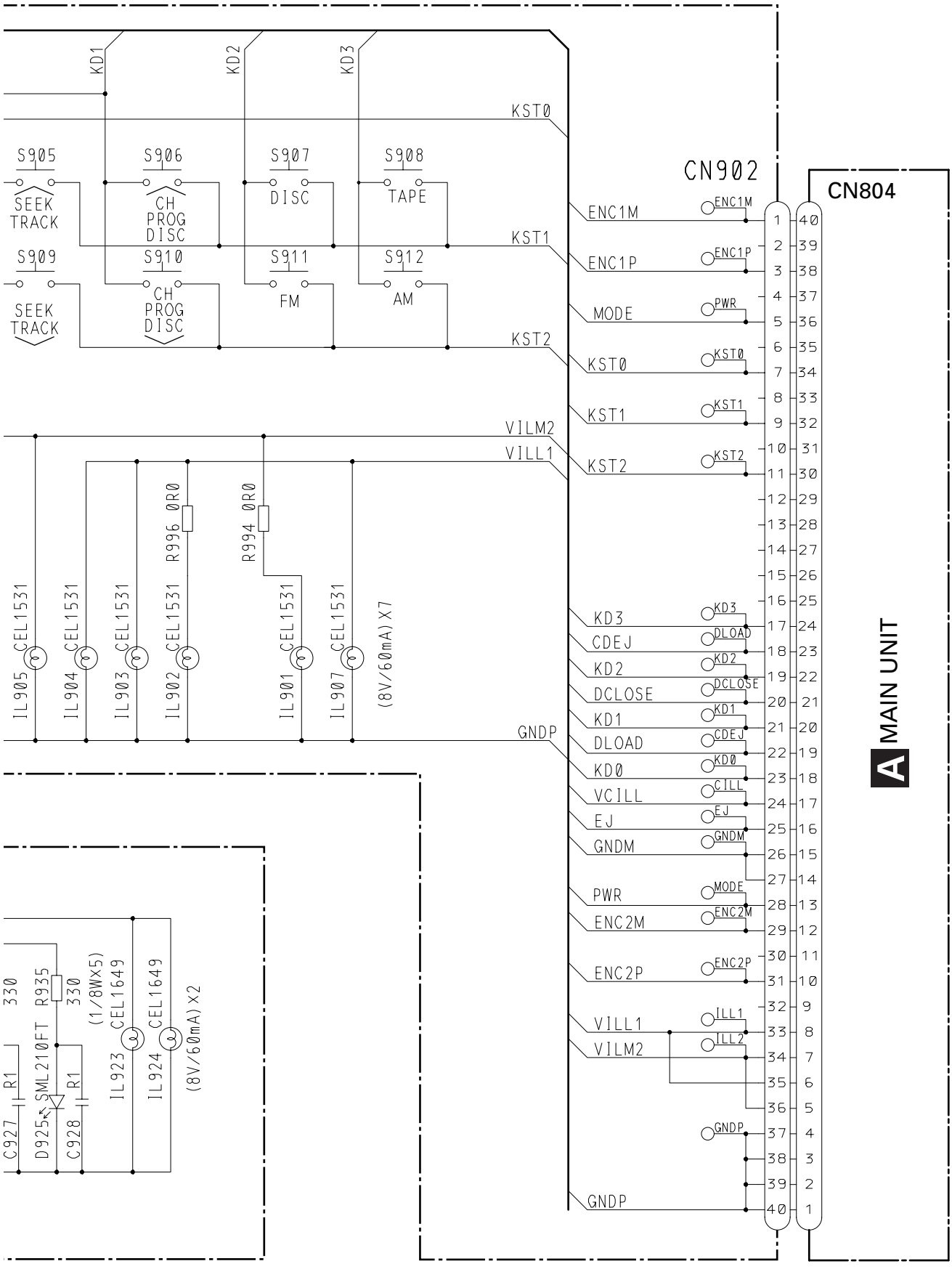
A-a A-b


NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022
TAPE : +1.2dBs
CN802
CN801
BUS DRIVER
IC602
HA12187FP
HARD MUTE
ANALOG SWITCH
IC305
TC74HC4066AF
VDD 5V REGULATOR
UNBALANCE TO BALANCE CONVERTER
SYSTEM CONTROLLER
IC601
PD5556B
8.5V
5.8V
GNDP
GNDS
GNDM
VDD

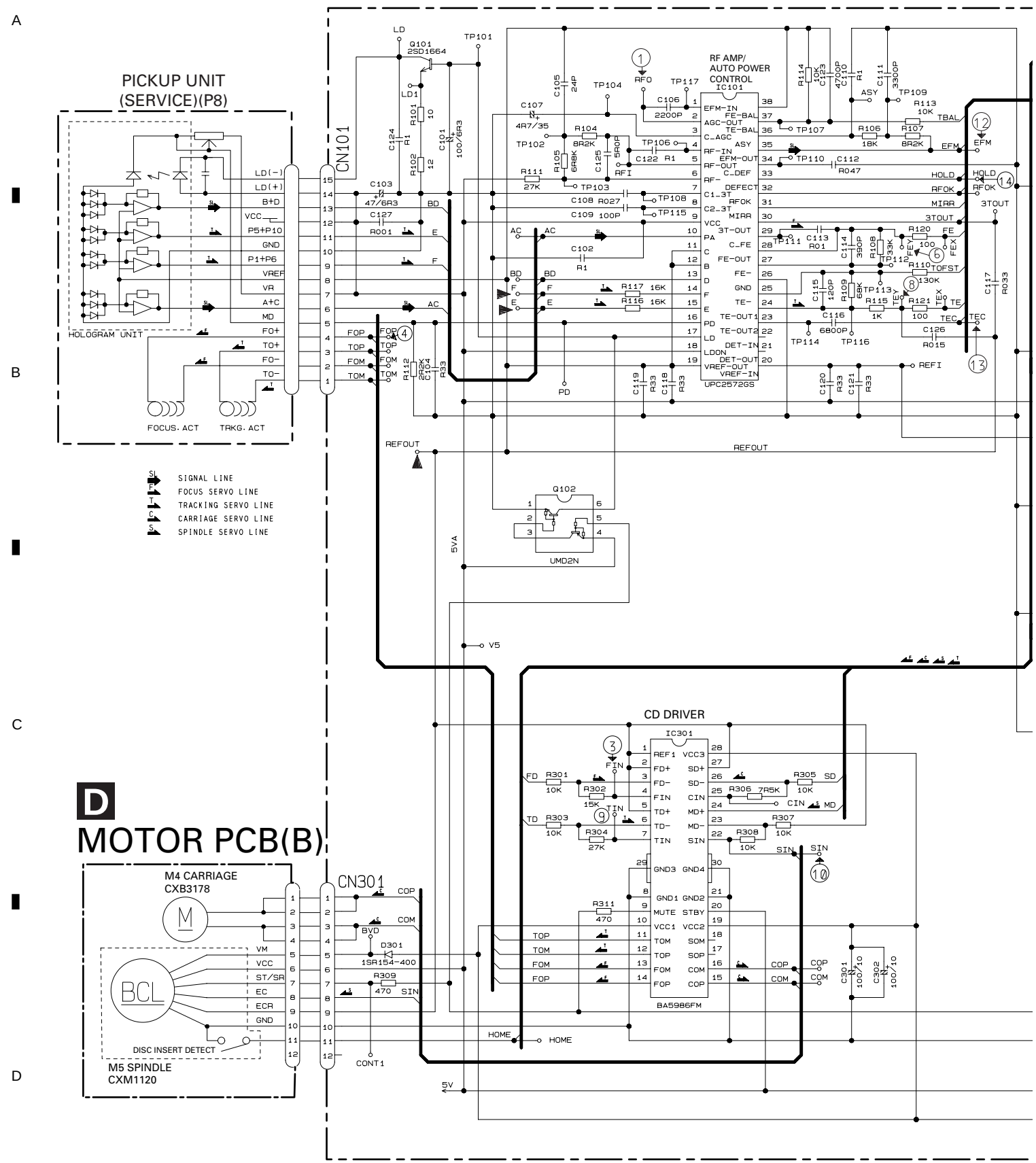

IC601
PD5556B
RESET
LPF
AUDIO 8.5V REGULATOR
CD 9V REGULATOR
ILLUMINATION 8V REGULATOR
ILL1 SELECTOR
CN806
GNDP
ISENS
BSENS
ASENS
ILL-
BU
8RSV
5.0V
VDD1
VDD2
CNVSS
GNDM

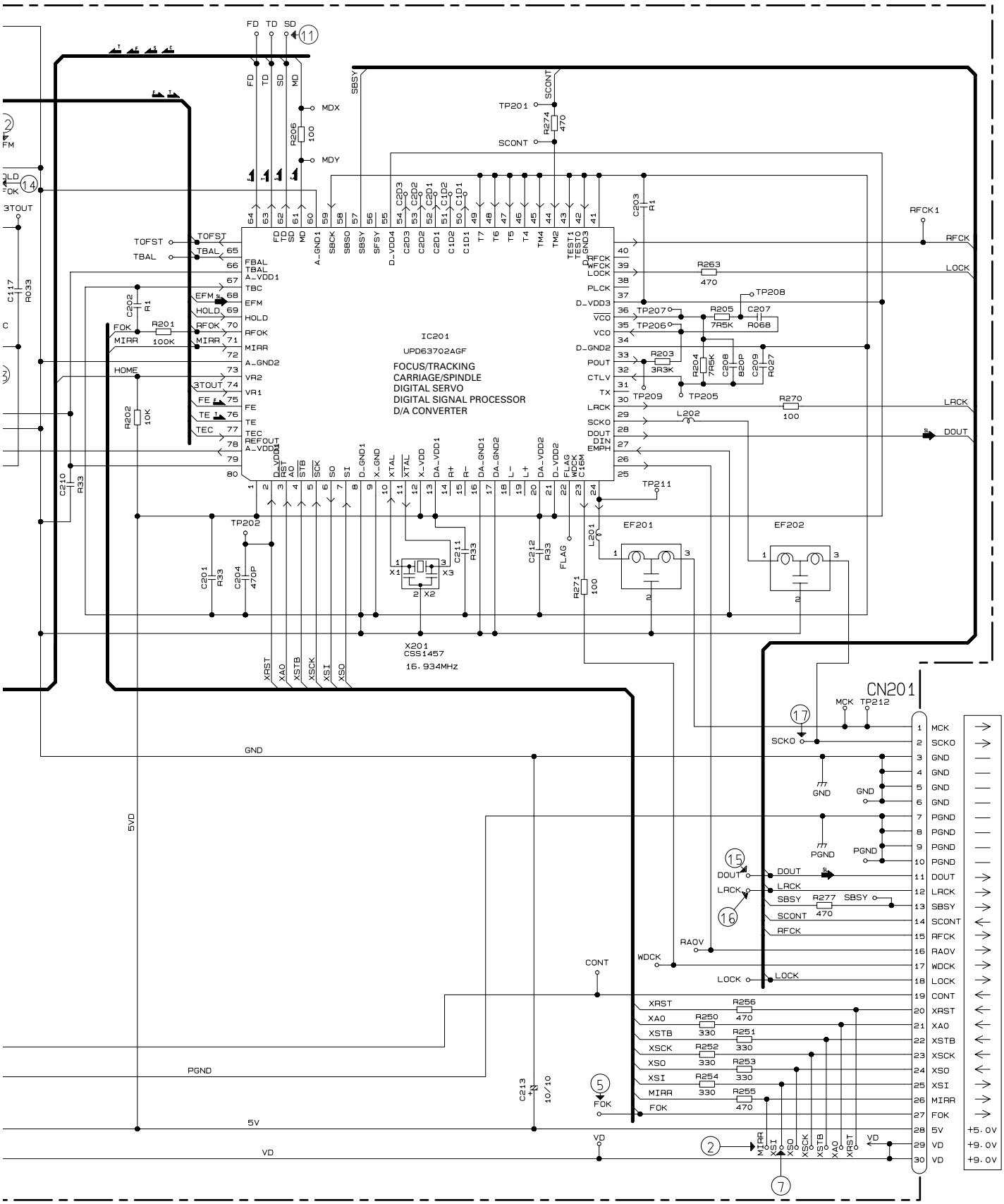
3.3 SW UNIT, KEYBOARD UNIT



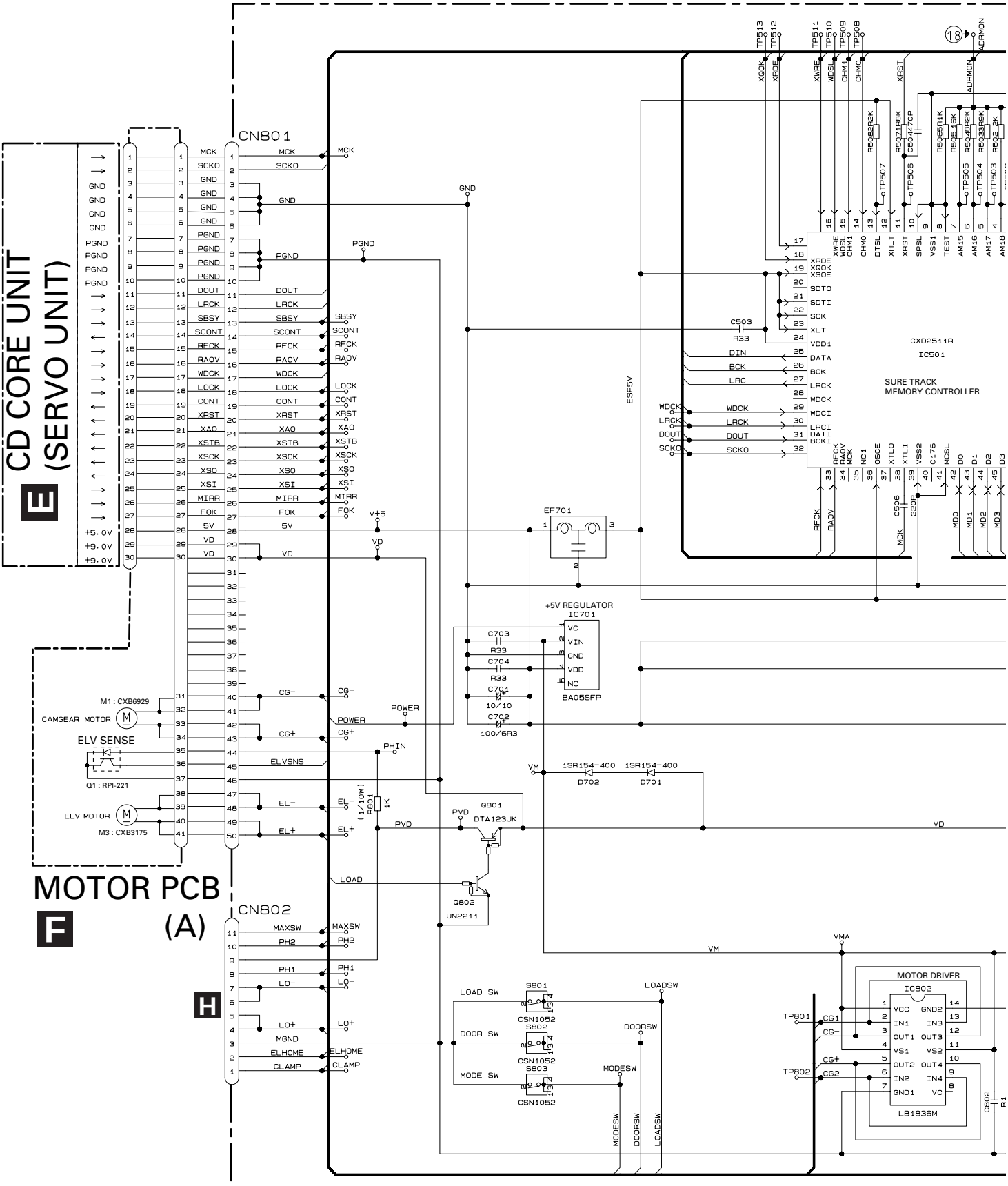

KD1
KD2
KD3
KST0
KST1
KST2
S905
SEEK TRACK
S906
CH PROG DISC
S907
DISC
S908
TAPE
S909
SEEK TRACK
S910
CH PROG DISC
S911
FM
S912
AM
VILM2
VILL1
GNDP
R996 0R0
R994 0R0
IL905 CEL1531
IL904 CEL1531
IL903 CEL1531
IL902 CEL1531
IL901 CEL1531
IL907 CEL1531
(8V/60mA) X7
CN902
CN804
ENC1M
ENC1P
MODE
KST0
KST1
KST2
KD3
CDEJ
KD2
DCLOSE
KD1
DLOAD
KD0
VCILL
EJ
GNDM
PWR
ENC2M
ENC2P
VILL1
VILM2
GNDP
MAIN UNIT
330
R935
330
(1/8W×5)
R1
SML210FT
R1
C927
D925
C928
IL923 CEL1649
IL924 CEL1649
(8V/60mA) X2

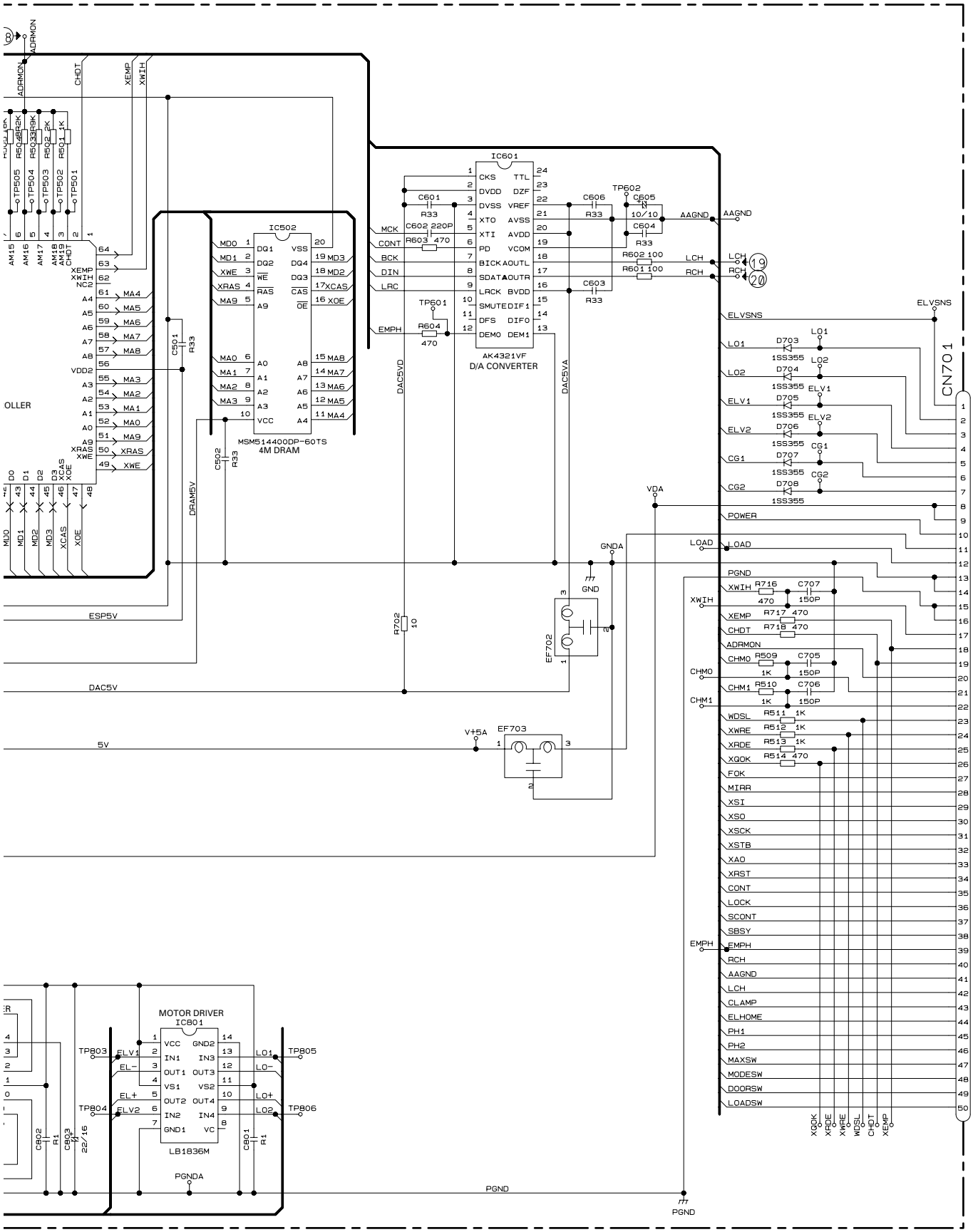
3.4 CD CORE UNIT(SERVO UNIT)




IC201
UPD63702AGF
FOCUS/TRACKING
CARRIAGE/SPINDLE
DIGITAL SERVO
DIGITAL SIGNAL PROCESSOR
D/A CONVERTER
X201
CSS1457
16.934MHz
CN201
FD TD SD
MDX
MDY
SCONT
RFCK
LOCK
LRCK
DOUT
SCKO
MCK
WDCK
RAOV
CONT
XRST
XA0
XSTB
XSCK
XSO
XSI
MIRR
FOK
SBSY
EF201
EF202
GND
PGND
5VD
5V
VD

G CD CORE UNIT(STS UNIT)

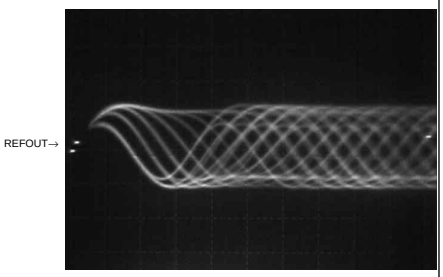



IC601
AK4321VF
D/A CONVERTER
IC502
MSM514400DP-60TS
4M DRAM
MOTOR DRIVER
IC801
LB1836M
CN701
TP601
TP602
EF702
EF703
DAC5VD
DAC5VA
DAC5V
ESP5V
DRAM5V
GNDA
PGNDA
PGND
VDA
V+5A
5V
AAGND
LCH
RCH
ELVSNS
LOAD
POWER
EMPH
XWIH
CHM0
CHM1
ADRMON
CHDT
XEMP
MCK
CONT
BCK
DIN
LRC
LO1
LO2
ELV1
ELV2
CG1
CG2
+9.0V
+5.0V
GND
PGND
XQOK
XRDE
XWRE
WDSL
CHDT
XEMP

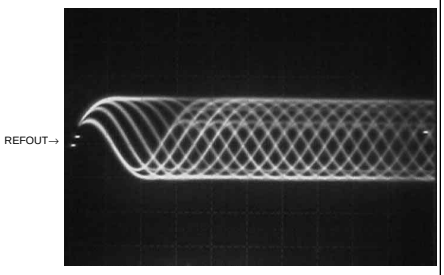
Note:1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
REFOUT:2.5V

● Waveforms

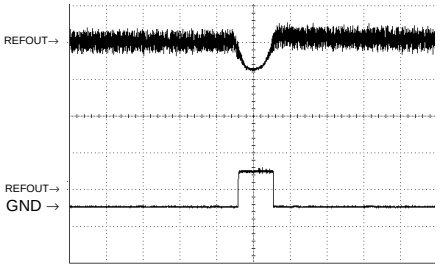
① RFO 0.5V/div. 0.2µs/div.
Normal mode: play



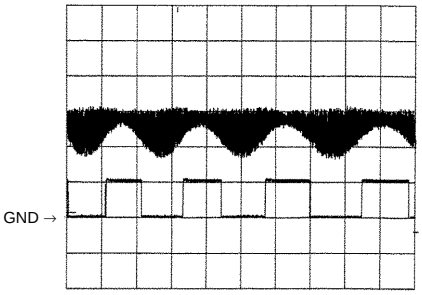
① RFO 0.5V/div. 0.5µs/div.
Test mode



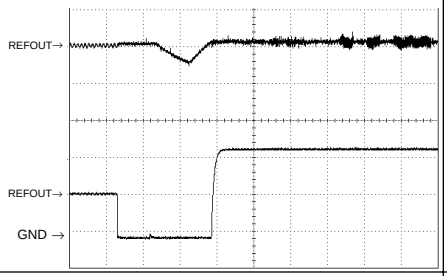
① CH1: RFO 1V/div.
② CH2: MIRR 5V/div. 0.5ms/div.
Normal mode: The defect part passes 500µs/div.



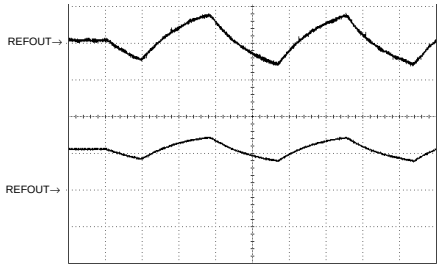
① CH1: RFO 1V/div.
② CH2: MIRR 5V/div. 0.5ms/div.
Test mode: Tracking open



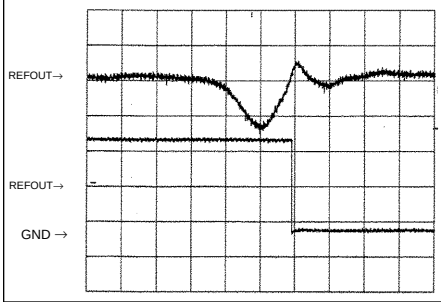
③ CH1: FIN 0.5V/div.
⑤ CH2: FOK 2V/div. 0.2s/div.
Normal mode: Focus close



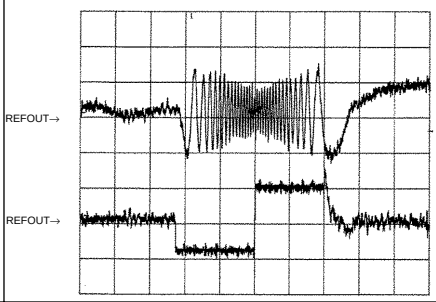
③ CH1: FIN 0.5V/div.
④ CH2: FOP 2V/div. 0.2s/div.
Test mode: No disc, Focus close



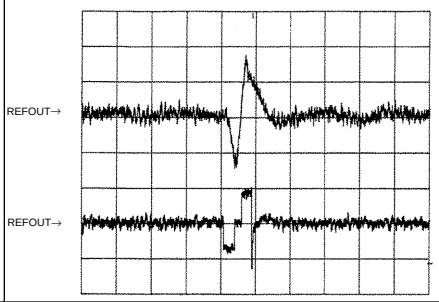
⑥ CH1: FEY 0.5V/div.
⑦ CH2: XSI 2V/div. 1ms/div.
Normal mode: Focus close



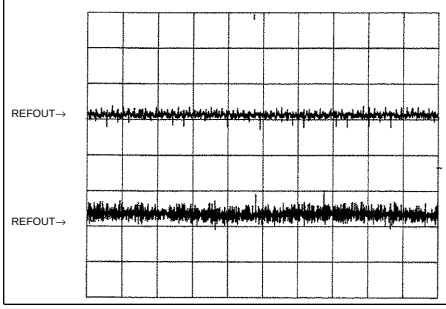
⑧ CH1: TEY 0.5V/div.
⑨ CH2: TIN 0.5V/div. 0.5ms/div.
Test mode: 32 tracks jump (FWD)



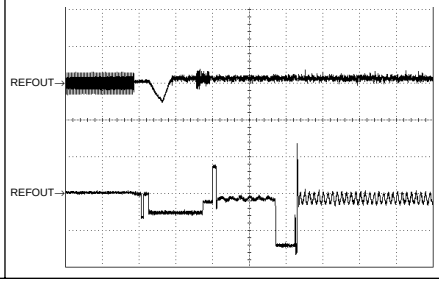
⑧ CH1: TEY 0.5V/div.
⑨ CH2: TIN 0.5V/div. 0.5ms/div.
Test mode: Single jump (FWD)



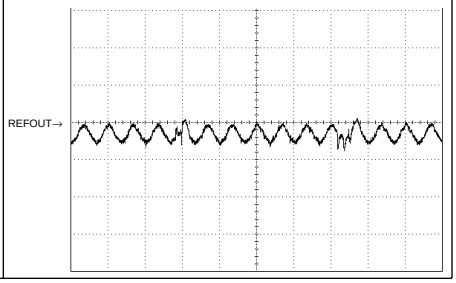
⑥ CH1: FEY 0.1V/div.
③ CH2: FIN 0.2V/div. 20ms/div.
Normal mode: Play



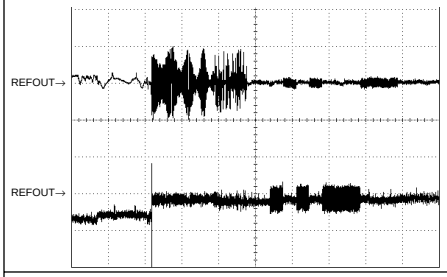
③ CH1: FIN 0.5V/div.
⑩ CH2: SIN 1V/div. 0.5s/div.
Normal mode: Focus close



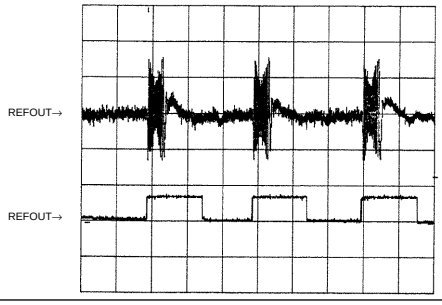
⑩ SIN 0.5V/div. 0.1s/div.
Normal mode: Play



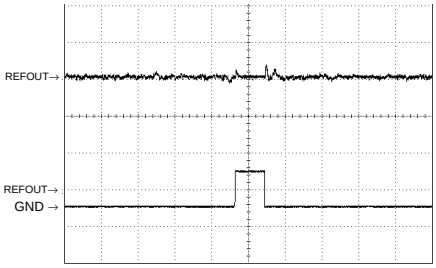
⑧ CH1: TEY 0.5V/div.
⑥ CH2: FEY 0.1V/div. 0.2s/div.
Normal mode: AGC after focus close



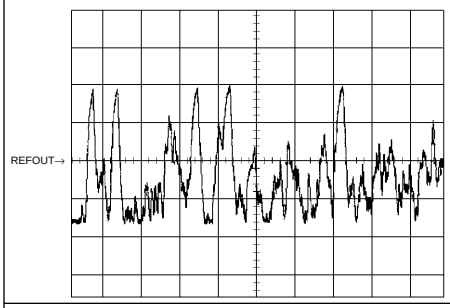
⑧ CH1: TEY 0.5V/div.
⑪ CH2: SD 0.5V/div. 5ms/div.



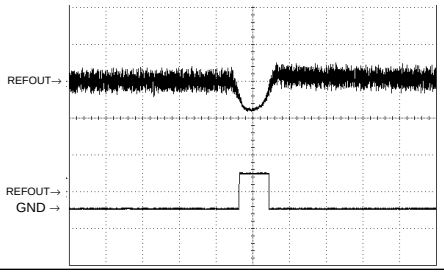
③ CH1: FIN 1V/div.
⑭ CH2: HOLD 5V/div. 500µs/div.
Normal mode: The defect part passes 800µm



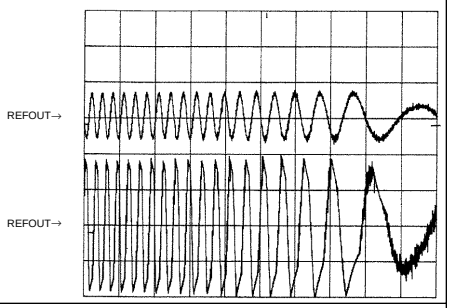
⑩ SIN 1V/div. 10ms/div.
Long Search



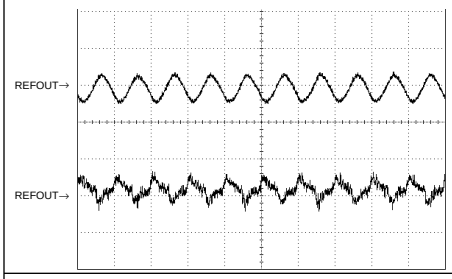
① CH1: RFO 1V/div.
⑭ CH2: HOLD 5V/div. 500µs/div.
Normal mode: The defect part passes 800µm



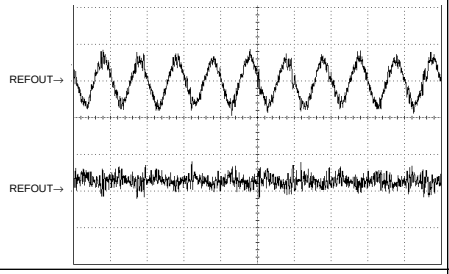
⑧ CH1: TEY 1V/div.
⑬ CH2: TEC 1V/div. 2ms/div.
Test mode: Focus close
Tracking open



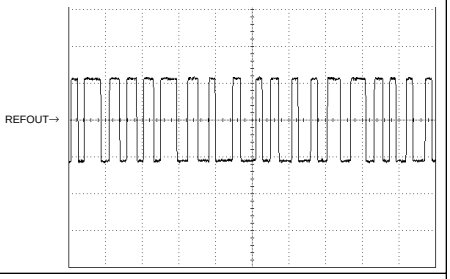
⑥ CH1: FEY 0.2V/div.
③ CH2: FIN 0.5V/div. 1ms/div.
Normal mode: During AGC



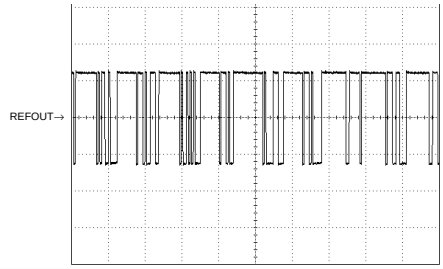
⑧ CH1: TEY 0.2V/div.
⑨ CH2: TIN 0.5V/div. 1ms/div.
Normal mode: During AGC



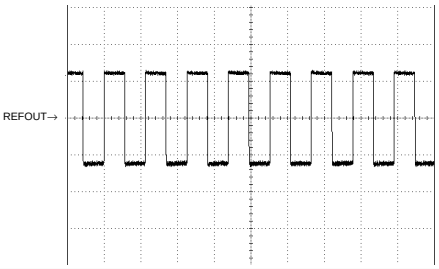
⑫ EFM 1V/div. 2µs/div.
Play



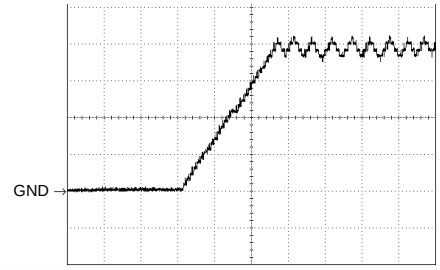
⑮ Dout 2V/div. 5µs/div.
Play

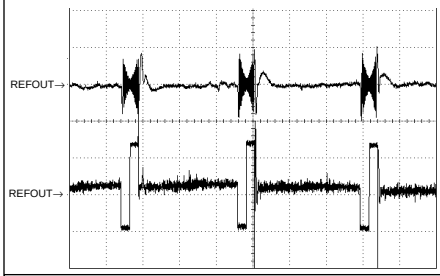
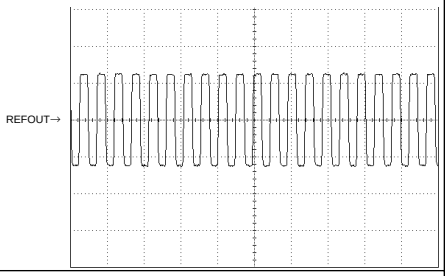
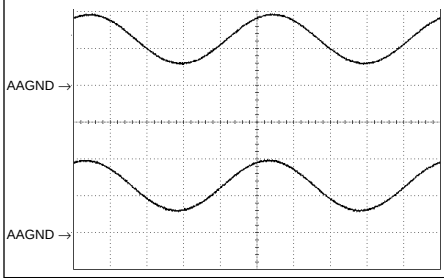


⑯ LRCK 2V/div. 10µs/div.

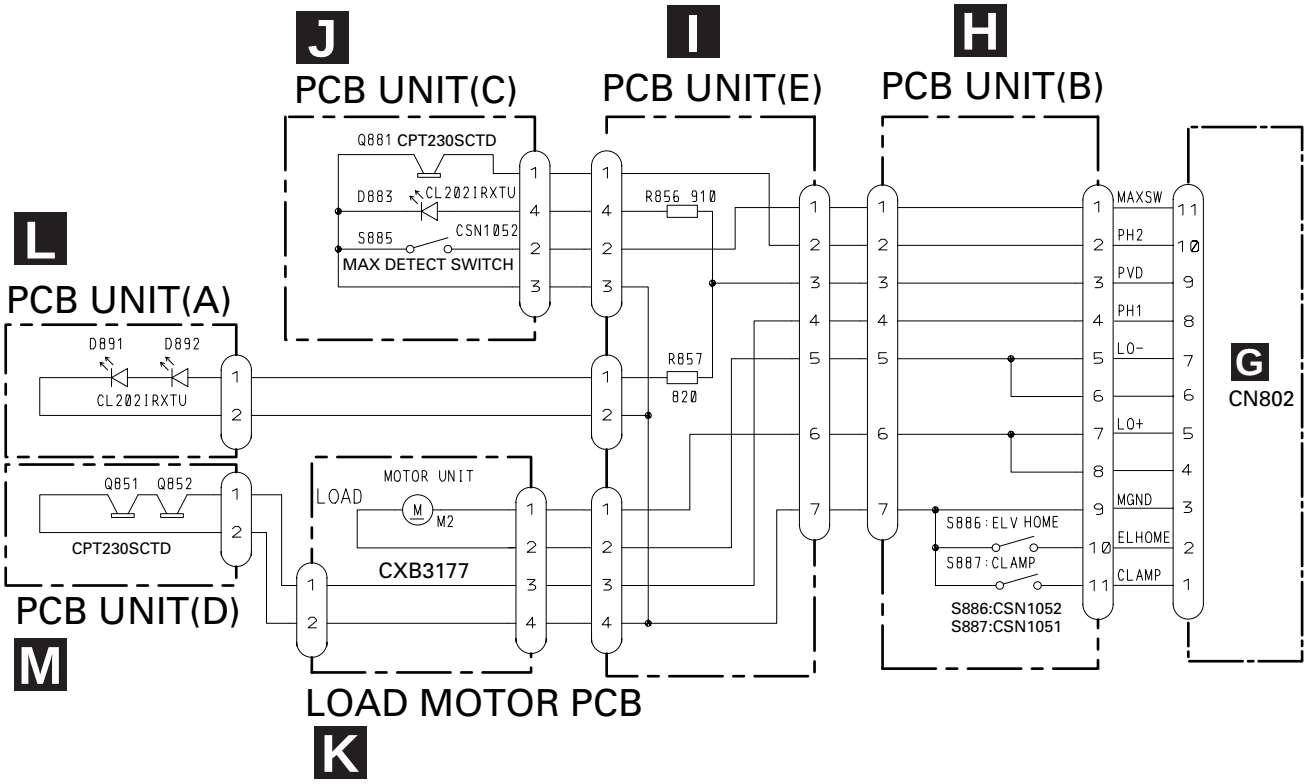


⑱ ADRMON 1V/div. 1s/div.
Normal mode: Starting play

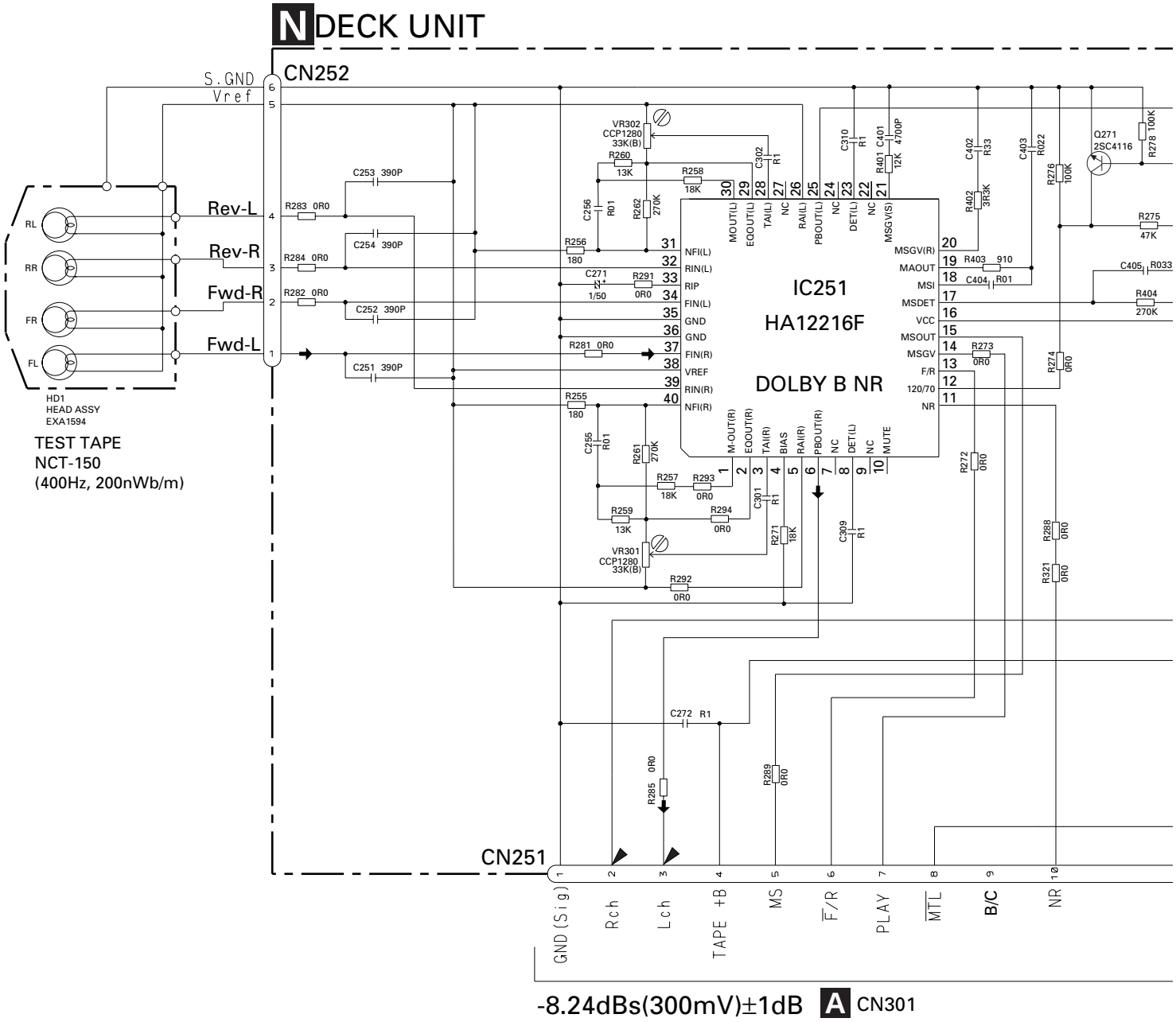


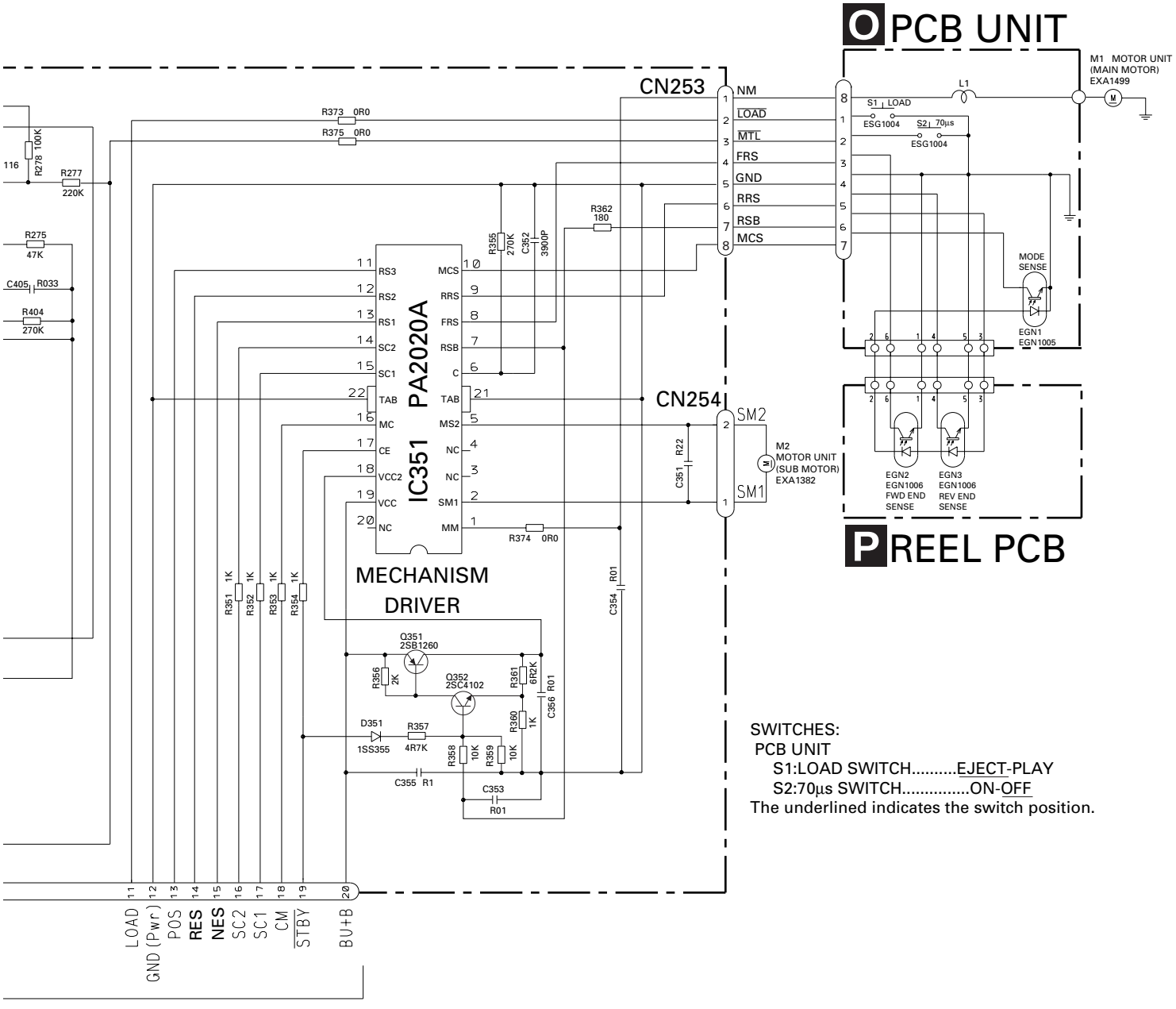
⑧ CH1: TEY 0.5V/div. ⑨ CH2: TIN 0.5V/div. 5ms/div. Test mode: 100 tracks jump(FWD) 	⑧ CH1: TEY 0.5V/div. ⑨ CH2: TIN 0.5V/div. 10ms/div. Normal mode: Play 	⑰ SCKO 2V/div. 500ns/div. Play 
⑳ CH1: RCH 2V/div. ⑲ CH2: LCH 2V/div. 200µs/div. Normal mode: PLAY (0dB,1kHz) 		

3.6 PCB UNIT(A,B,C,D,E), LOAD MOTOR PCB



3.7 CASSETTE MECHANISM MODULE





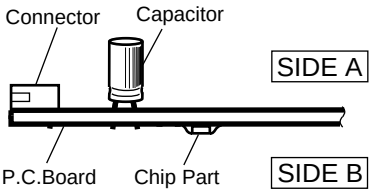
SWITCHES:
PCB UNIT
S1:LOAD SWITCH.....EJECT-PLAY
S2:70µs SWITCH.....ON-OFF
The underlined indicates the switch position.

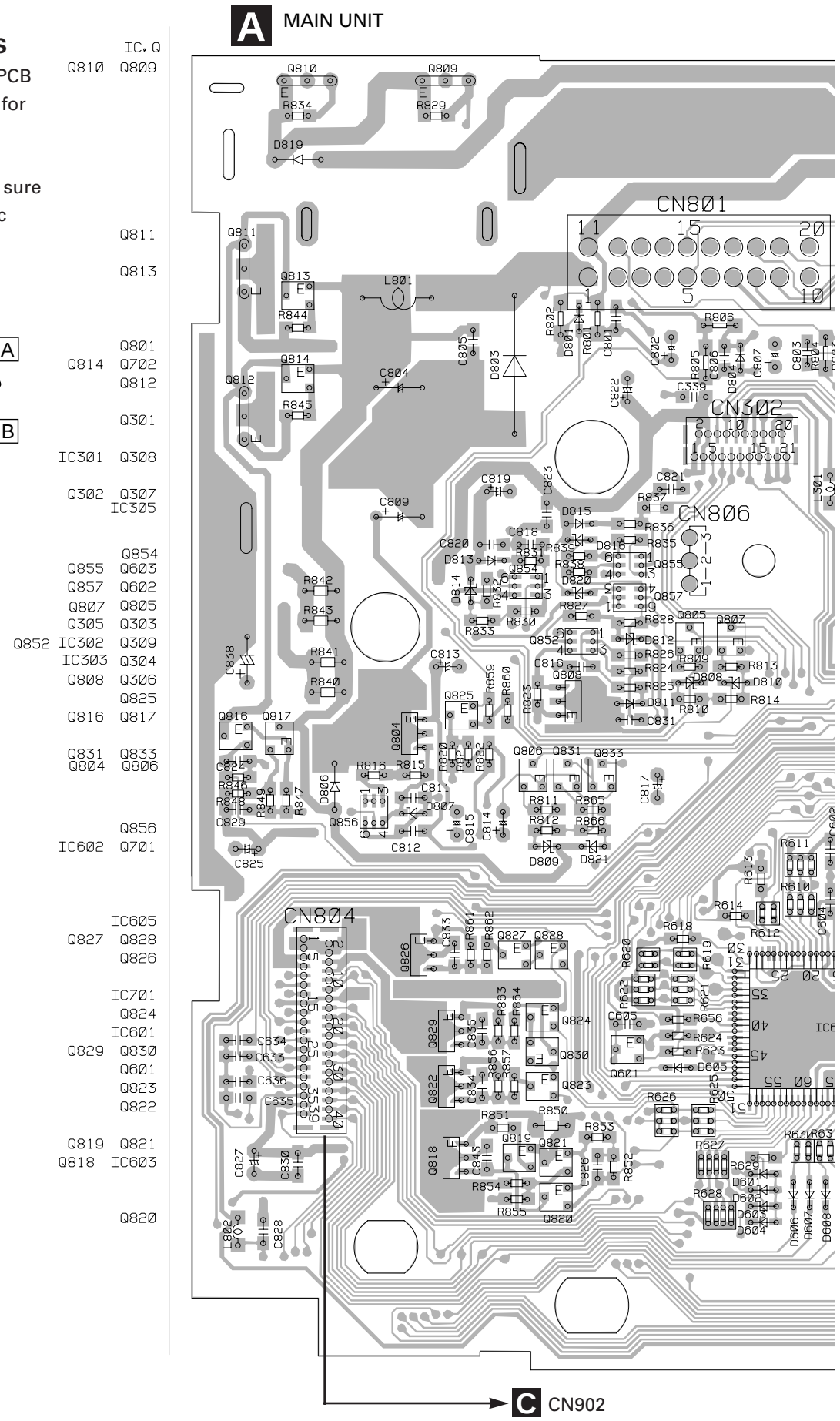
4. PCB CONNECTION DIAGRAM

4.1 MAIN UNIT

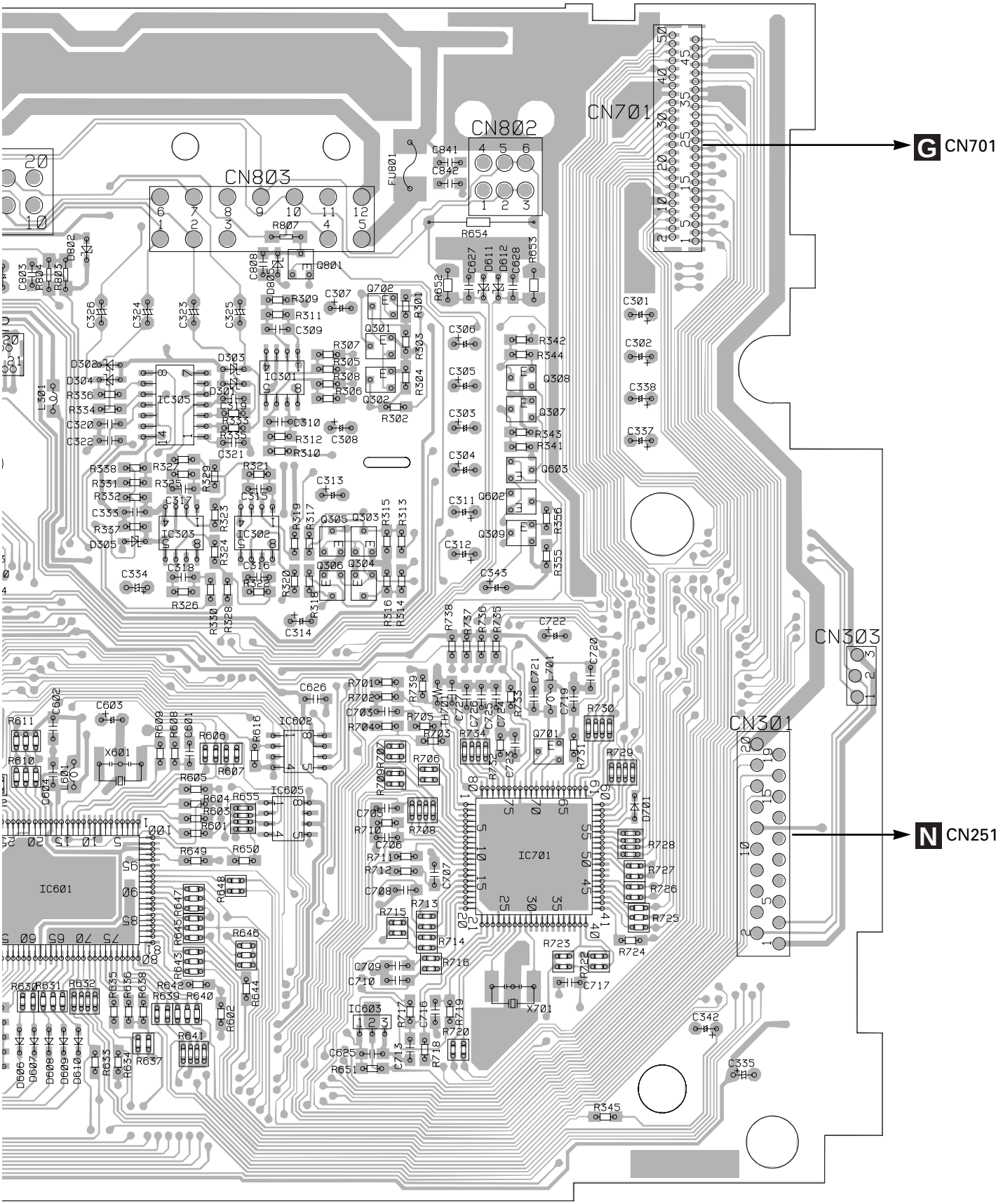
NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



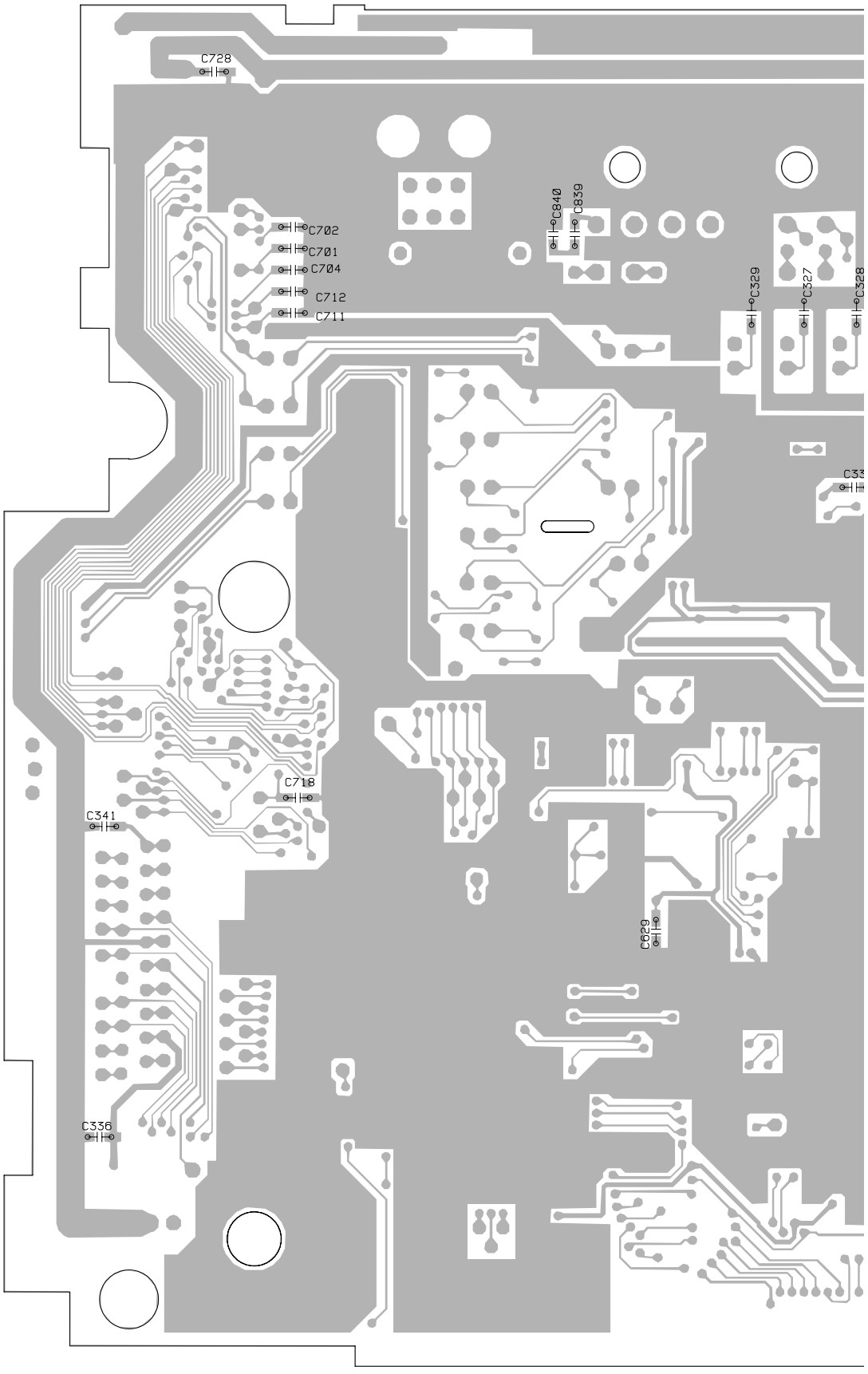


SIDE A

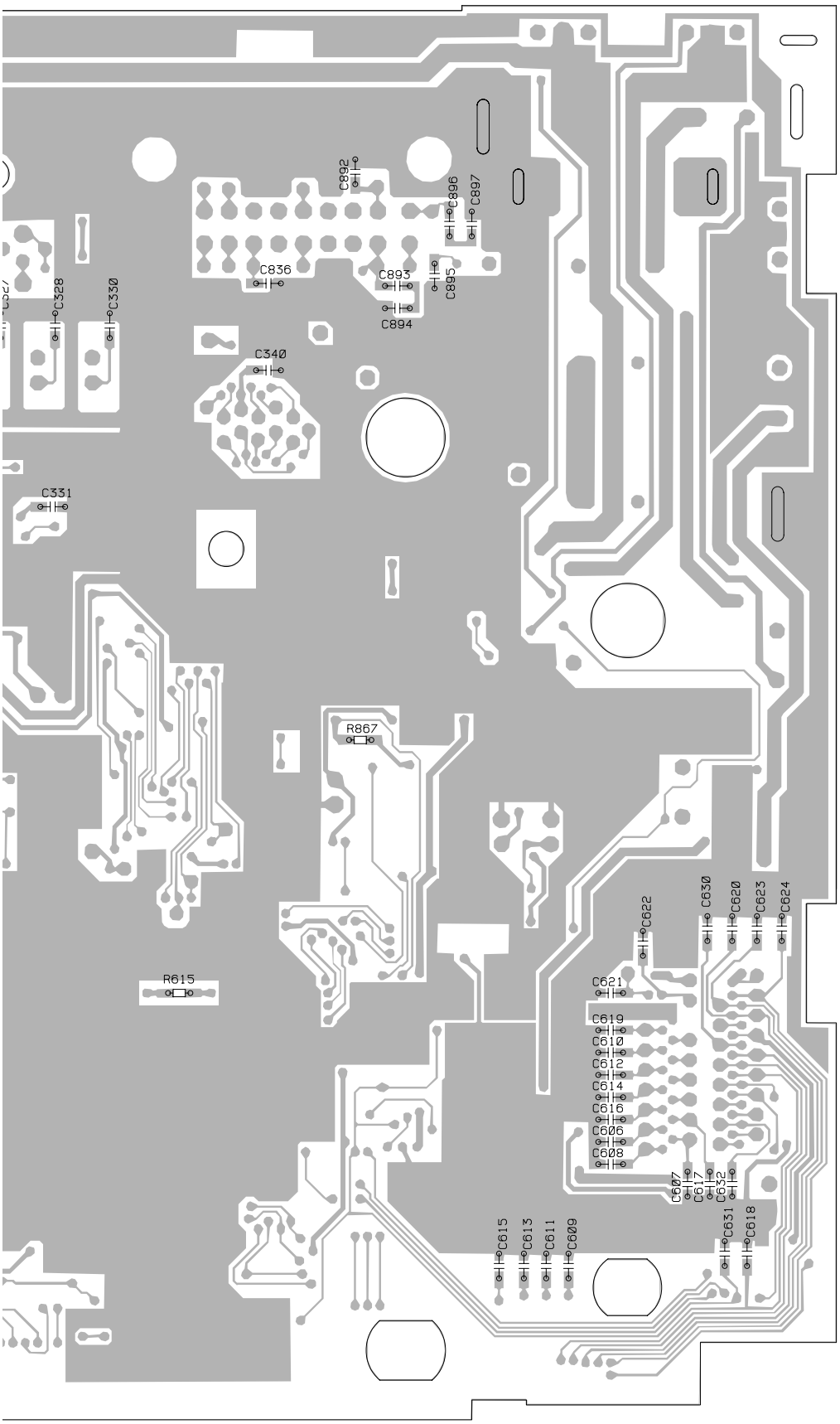

CN701
CN802
CN803
CN303
CN301
IC601
IC701
IC602
IC603
IC605
IC301
IC302
IC303
IC305
G CN701
N CN251

FRONT

A MAIN UNIT


C728
C702
C701
C704
C712
C711
C840
C839
C329
C327
C328
C718
C341
C629
C336
FRONT

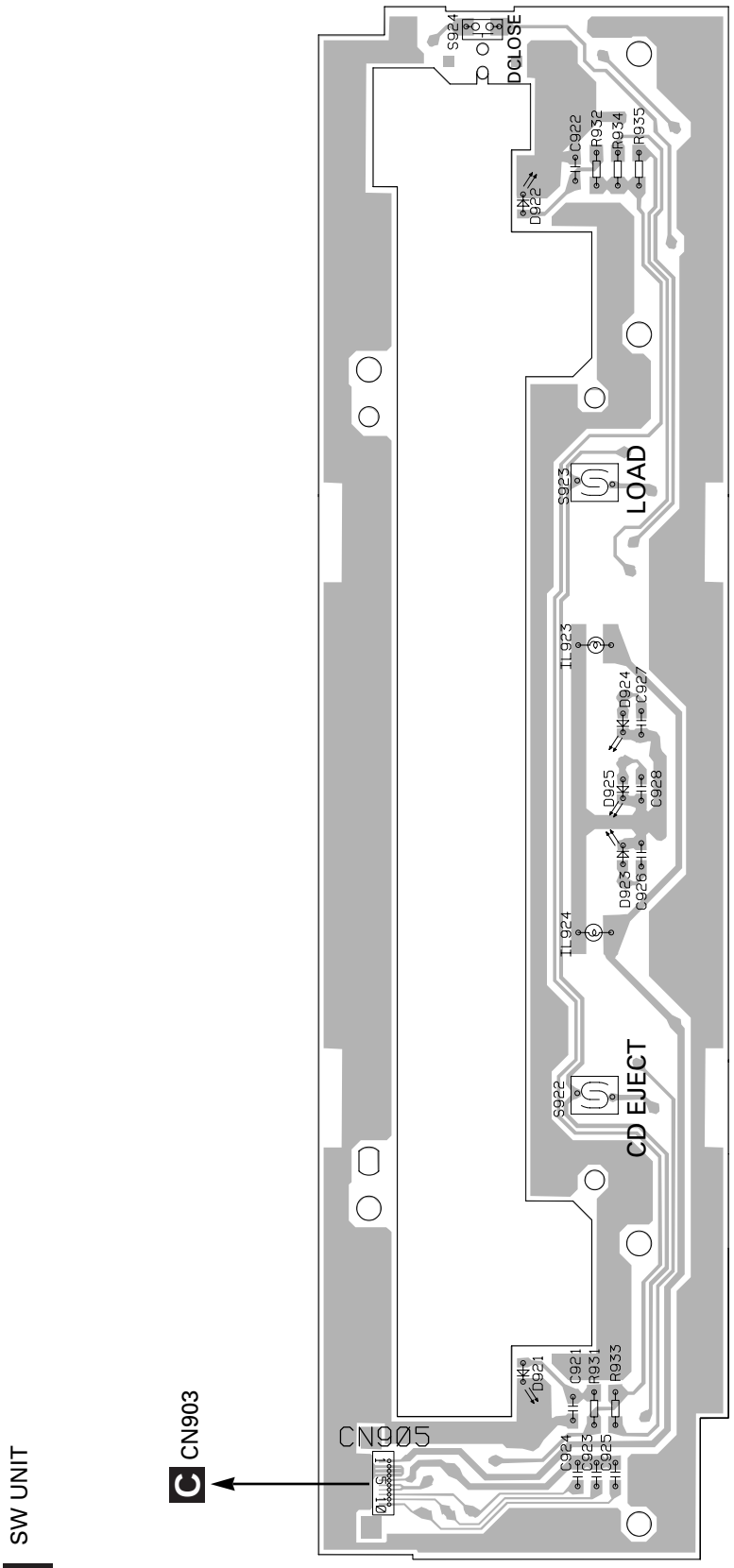
SIDE B


C892
C896
C897
C836
C893
C895
C894
C328
C330
C340
C331
R867
R615
C622
C630
C620
C623
C624
C621
C619
C610
C612
C614
C616
C606
C608
C607
C617
C632
C631
C618
C615
C613
C611
C609

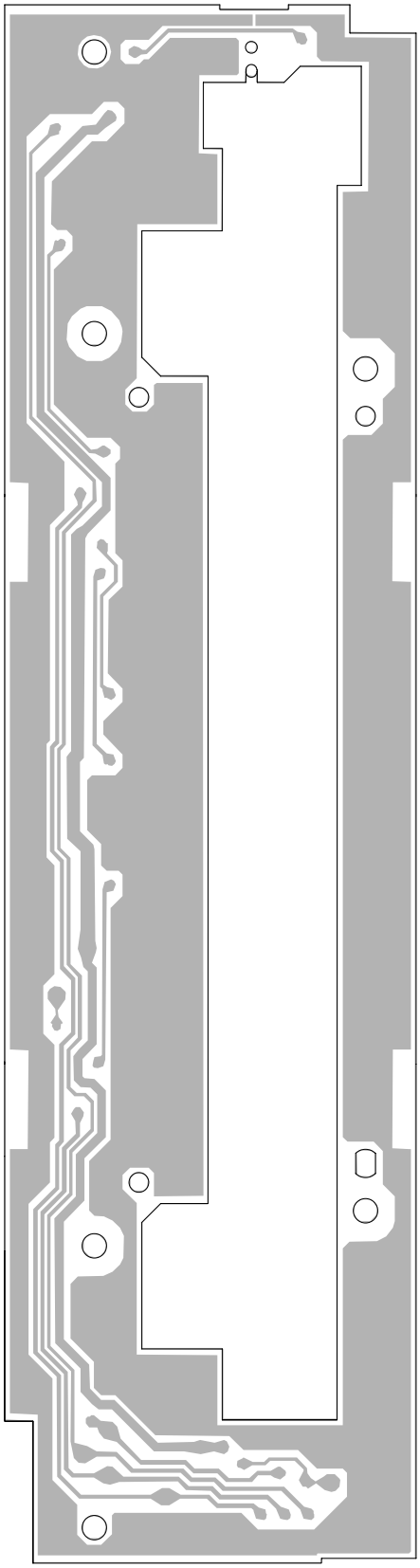
T

4.2 SW UNIT

SIDE A



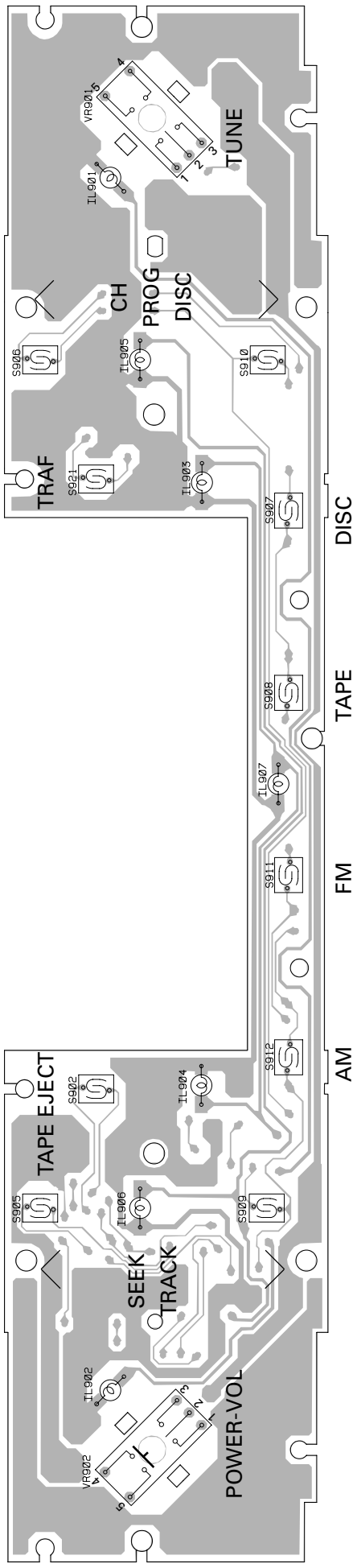
SIDE B



B SW UNIT

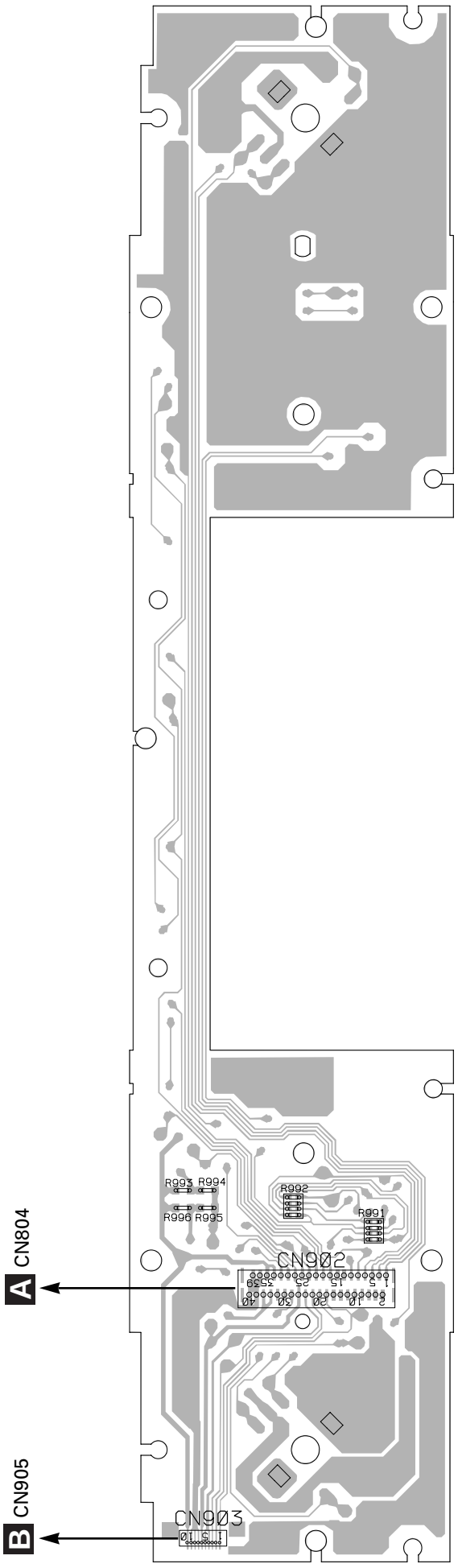
4.3 KEYBOARD UNIT

SIDE A



C KEYBOARD UNIT

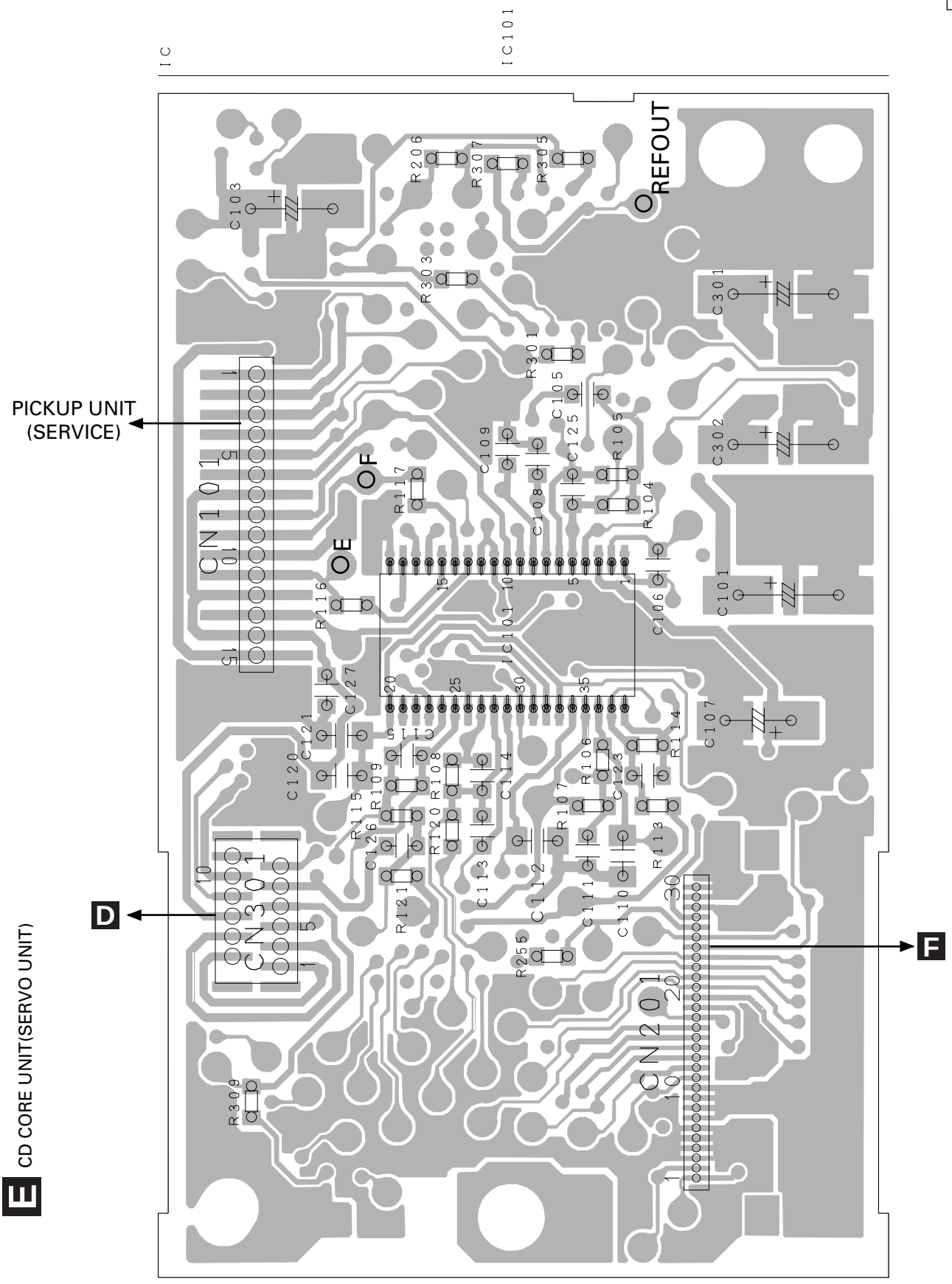
SIDE B



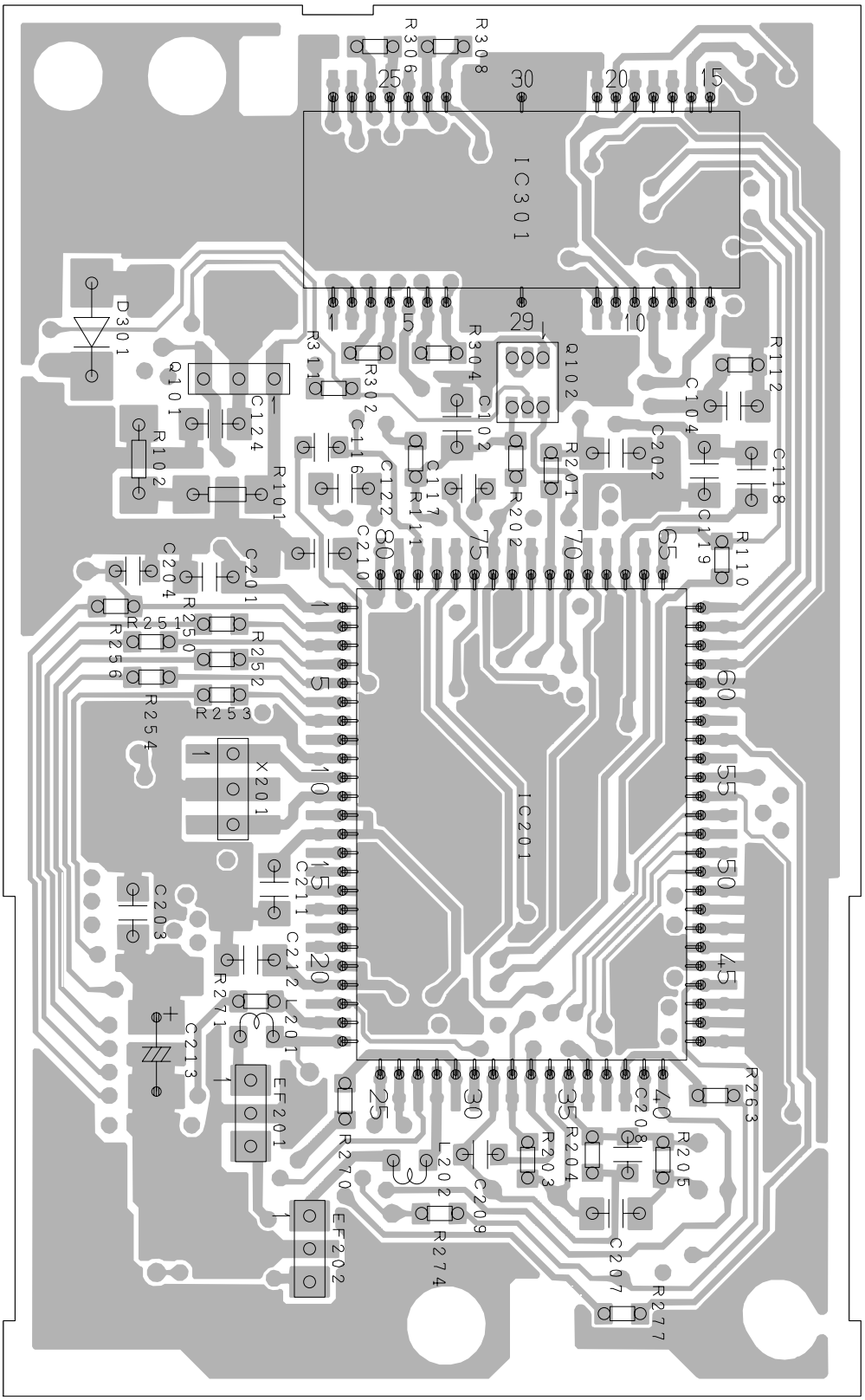
C KEYBOARD UNIT

4.4 CD CORE UNIT(SERVO UNIT)

SIDE A



SIDE B

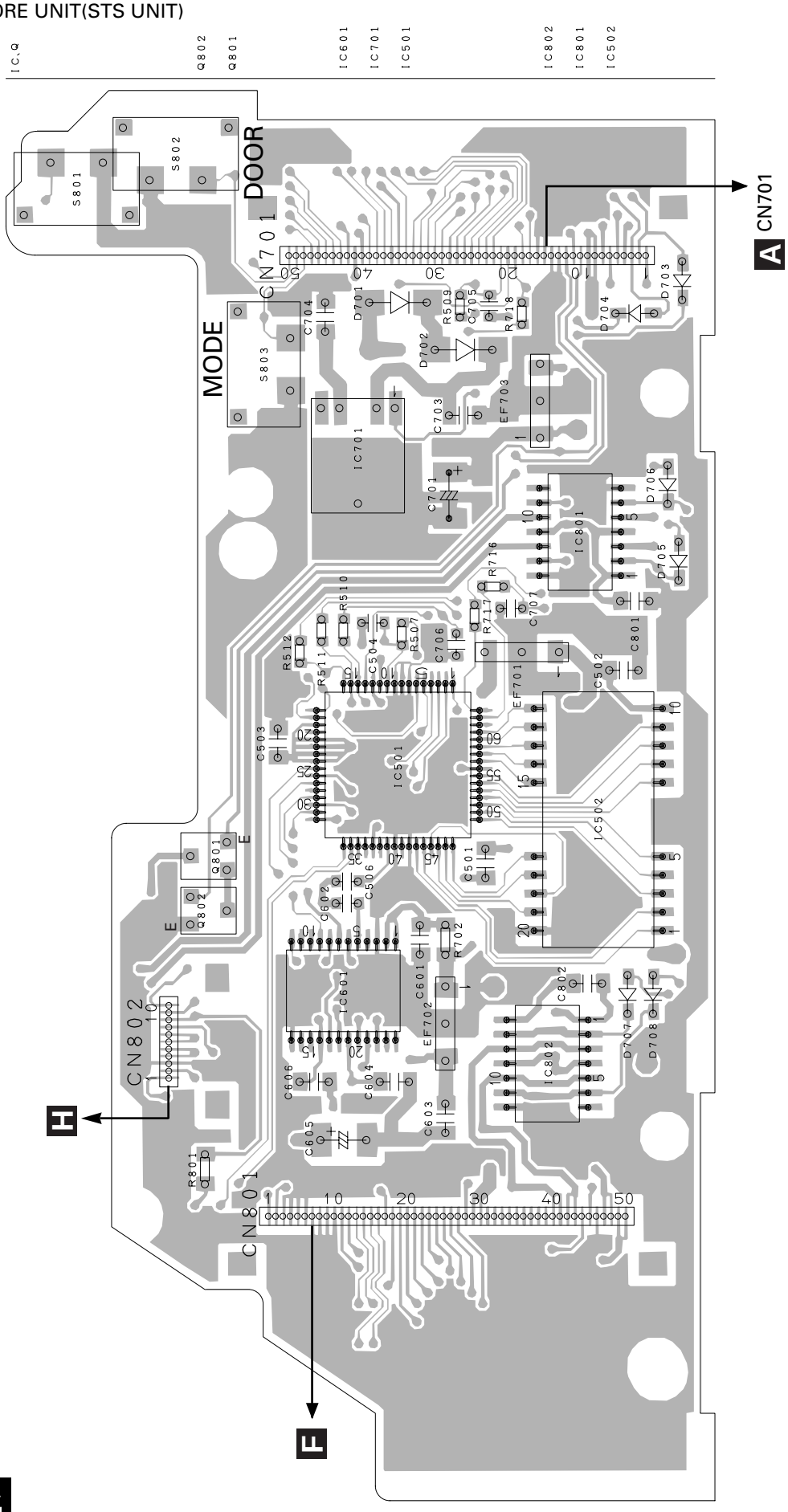


CD CORE UNIT(SERVO UNIT)

4.5 CD CORE UNIT(STS UNIT)

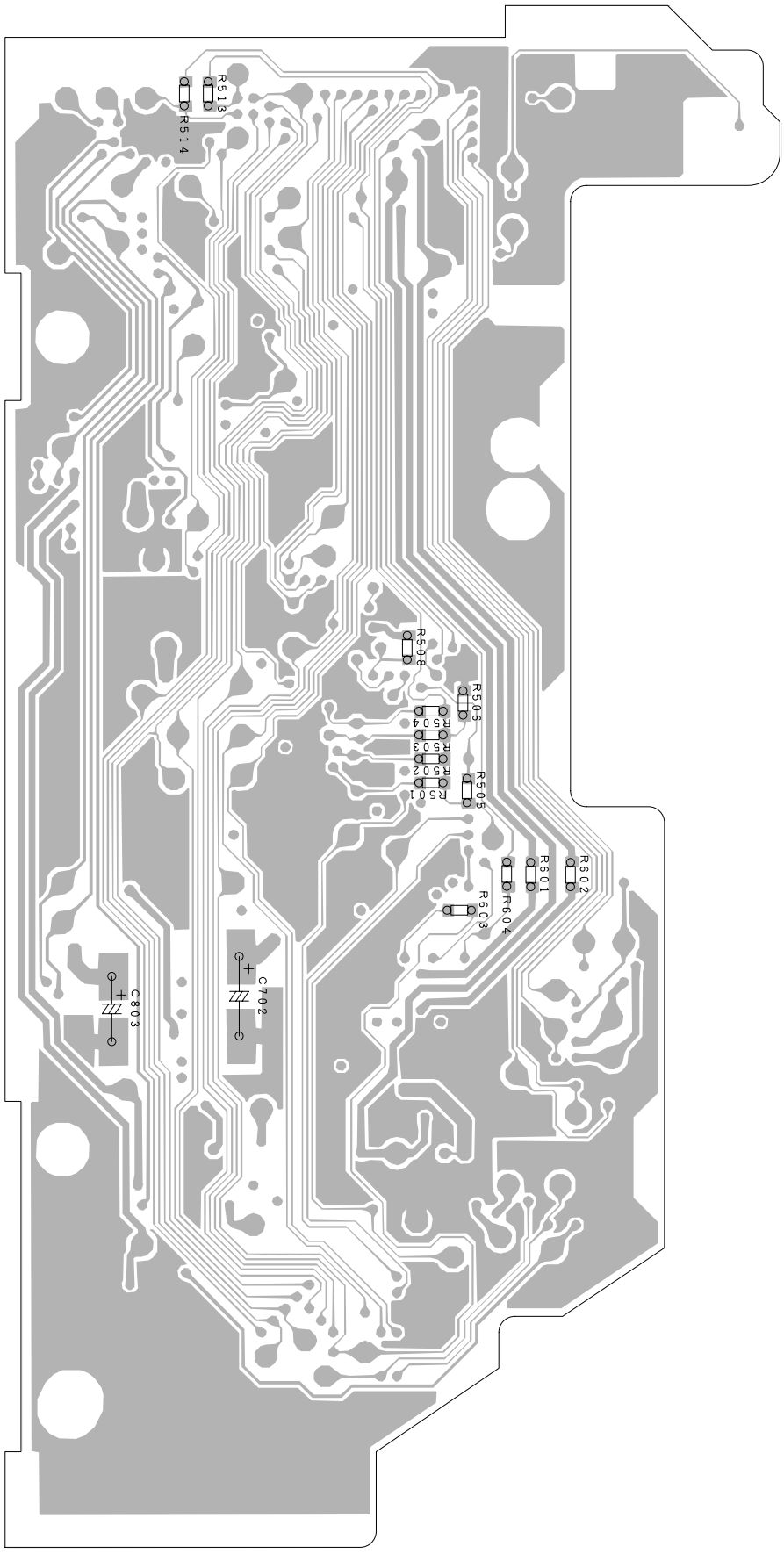
G CD CORE UNIT(STS UNIT)

SIDE A



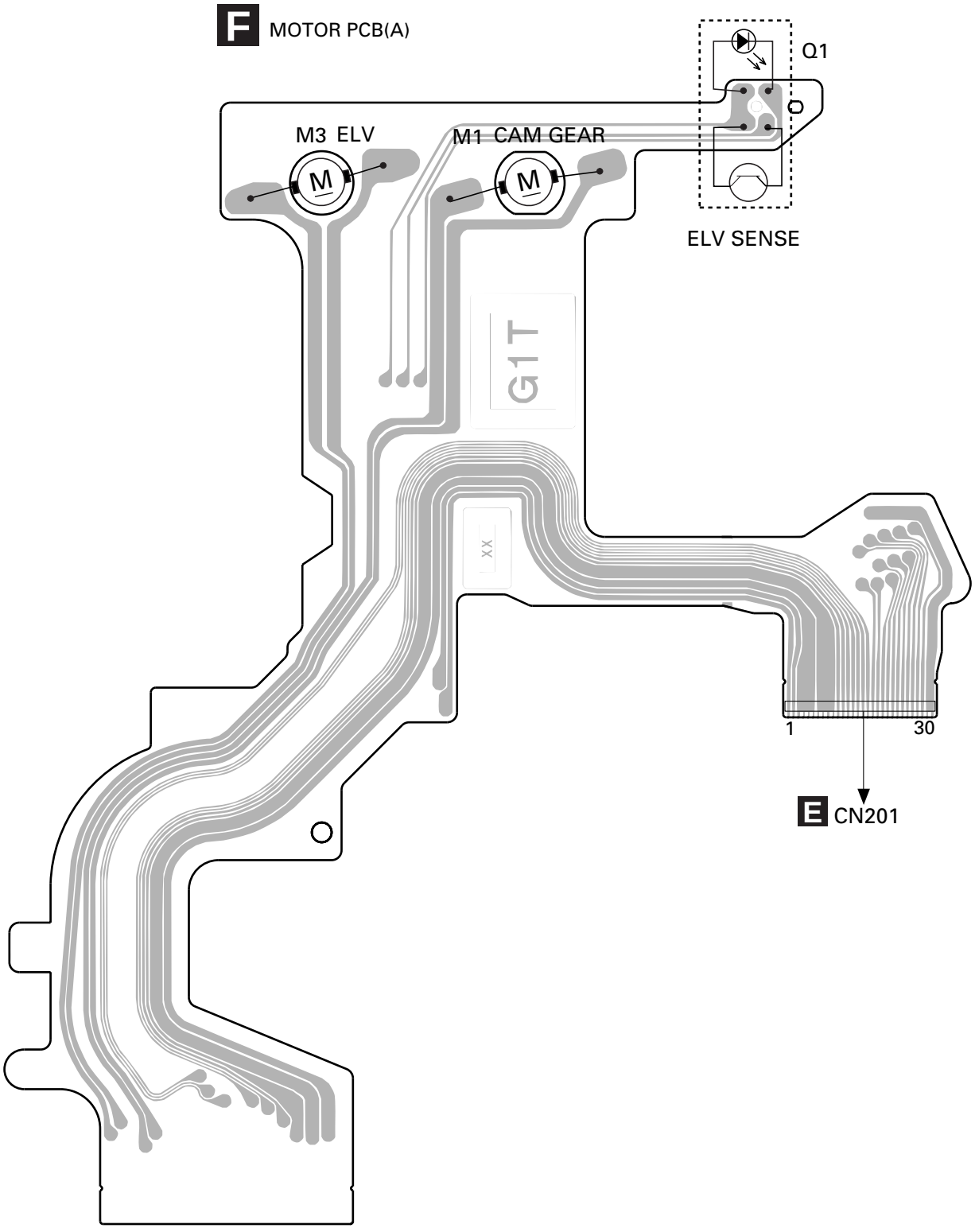
G CD CORE UNIT(STS UNIT)

SIDE B



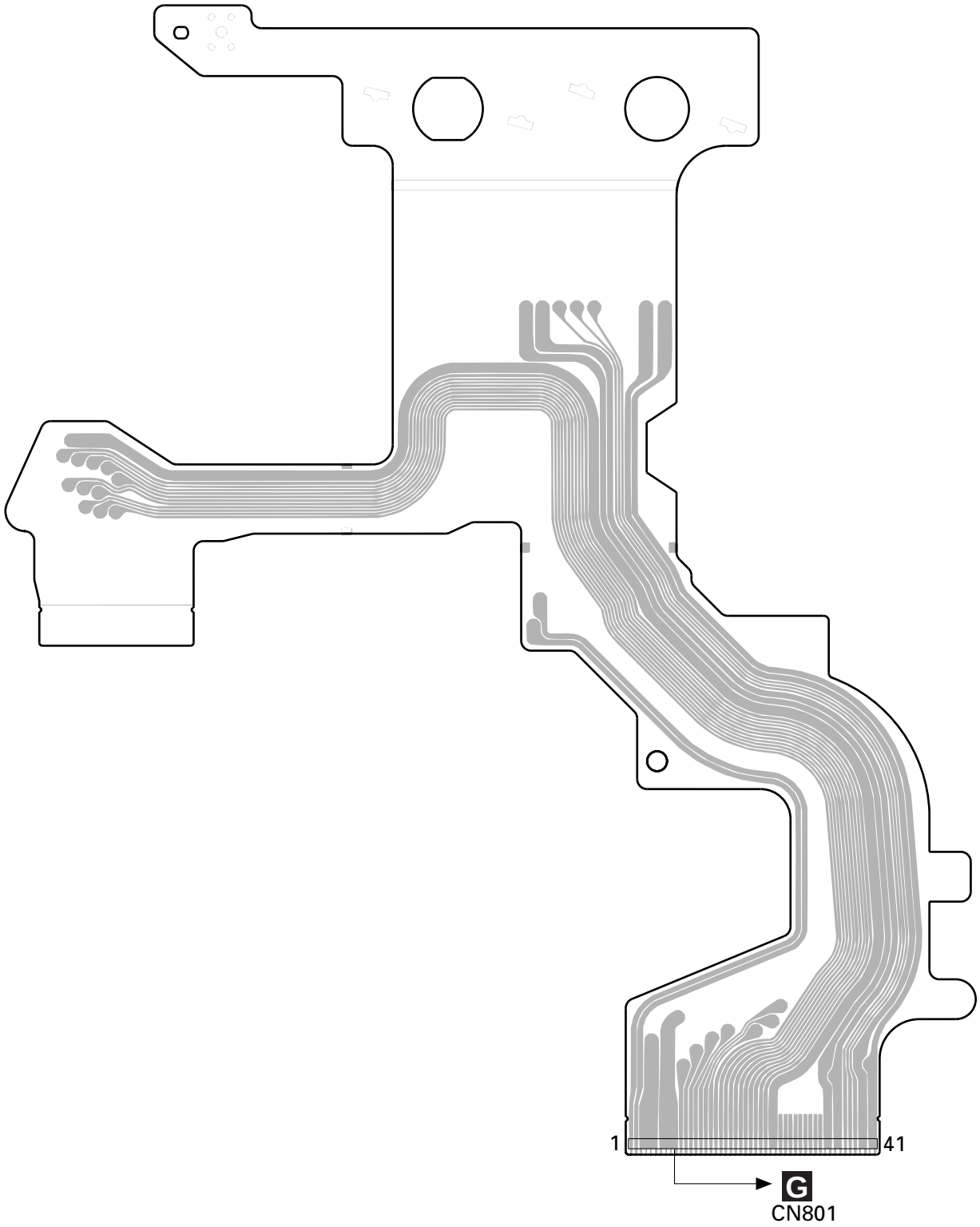
4.6 MOTOR PCB(A)

SIDE A



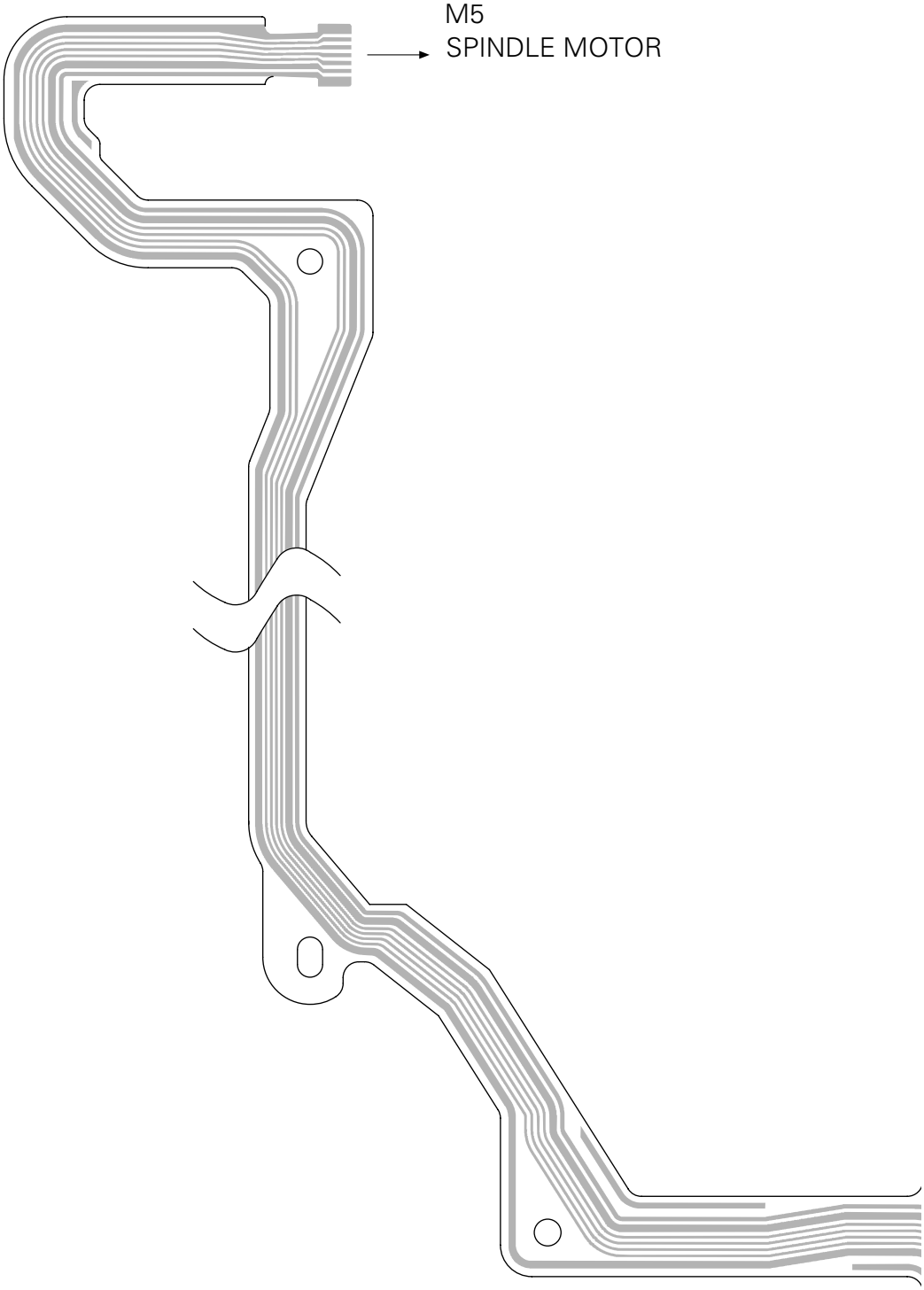
SIDE B

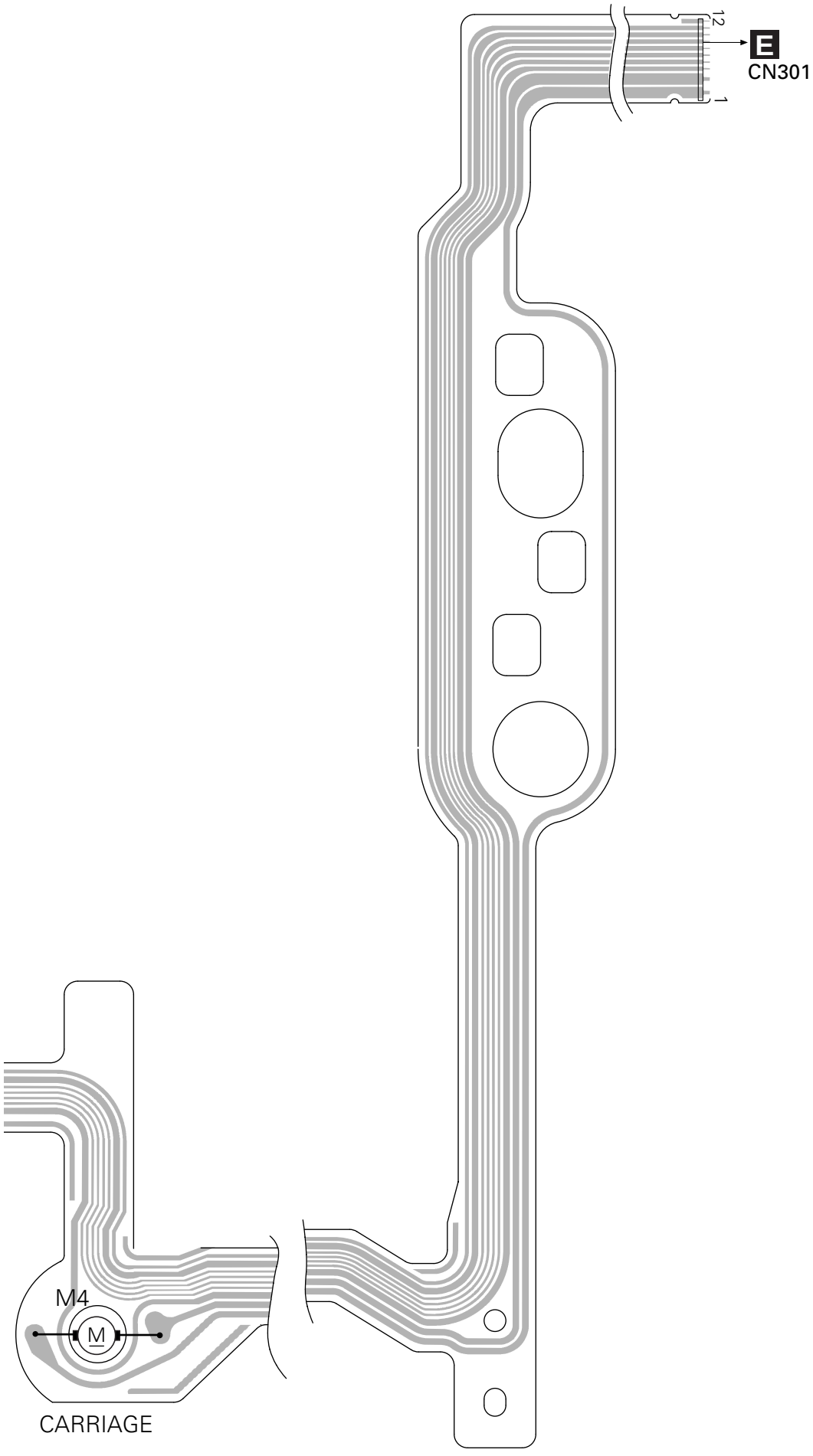
F MOTOR PCB(A)



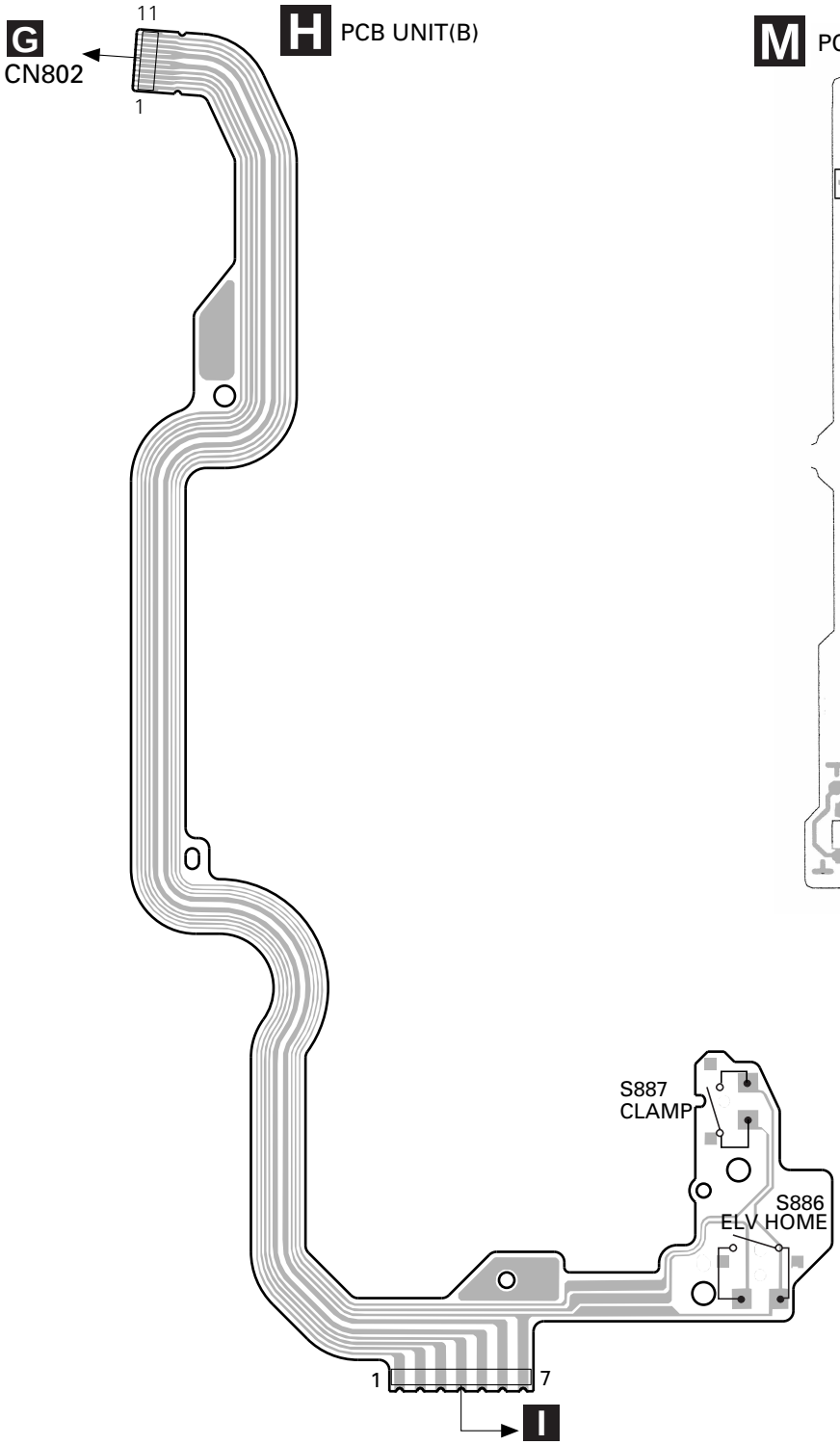
4.7 MOTOR PCB(B)

D MOTOR PCB(B)

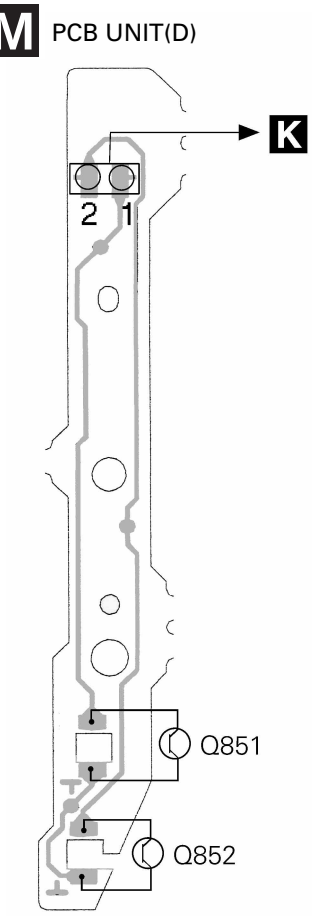



12
1
E
CN301
M4
M
CARRIAGE

4.8 PCB UNIT(B)

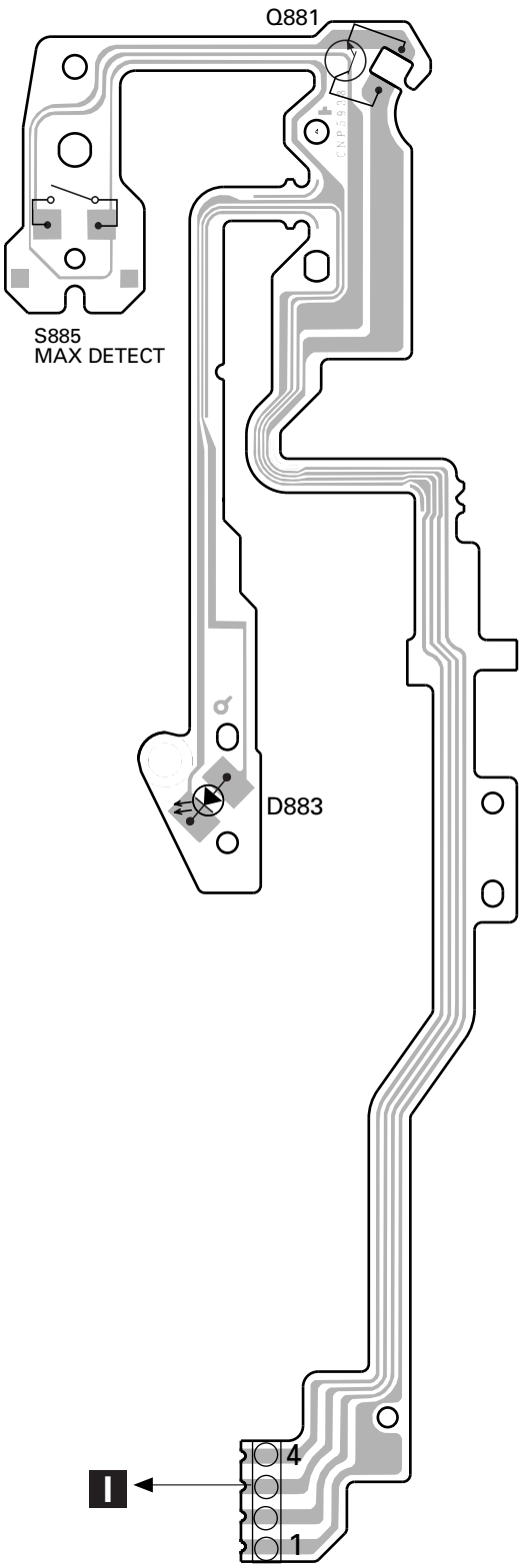


4.9 PCB UNIT(D)

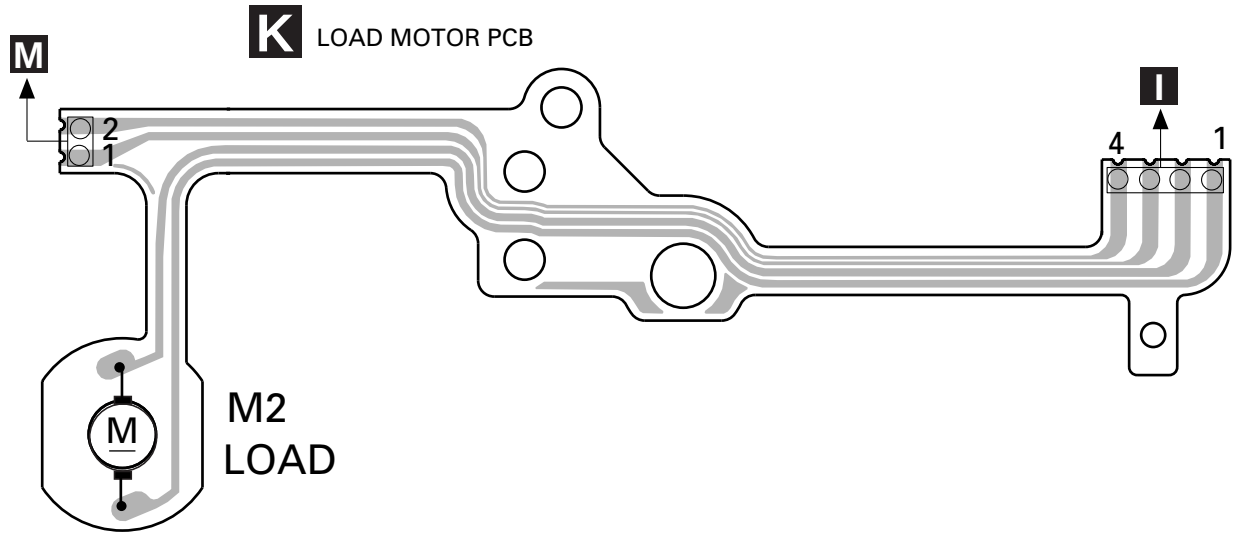


4.10 PCB UNIT(C)

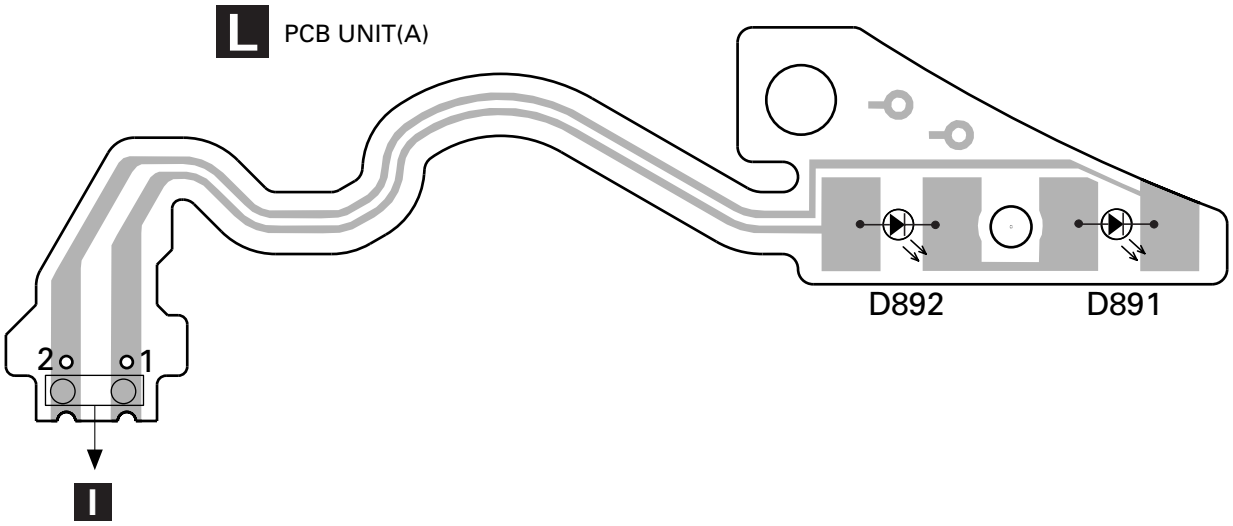
J PCB UNIT(C)



4.11 LOAD MOTOR PCB



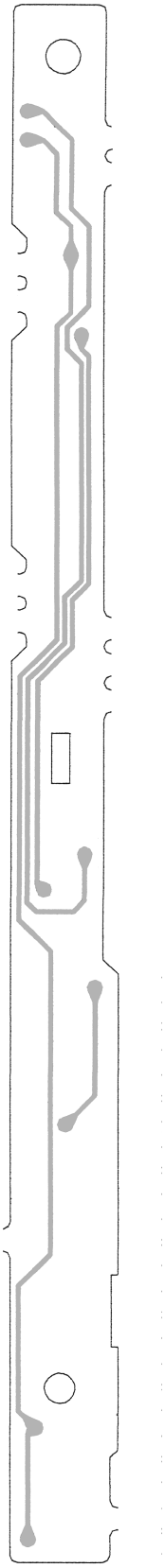
4.12 PCB UNIT(A)



4.13 PCB UNIT(E)

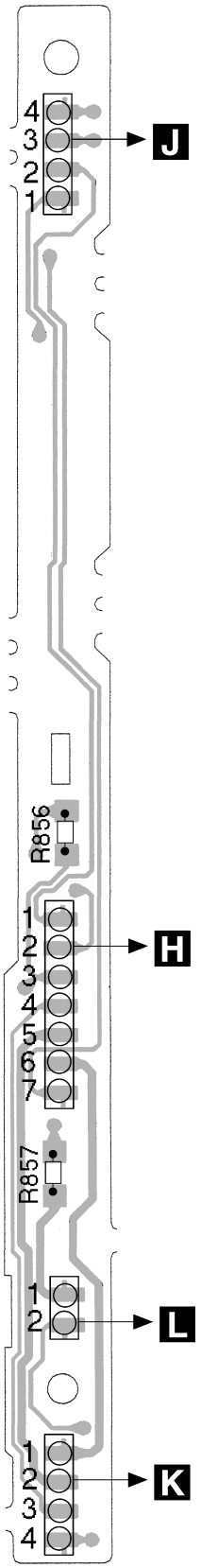
I PCB UNIT(E)

SIDE A



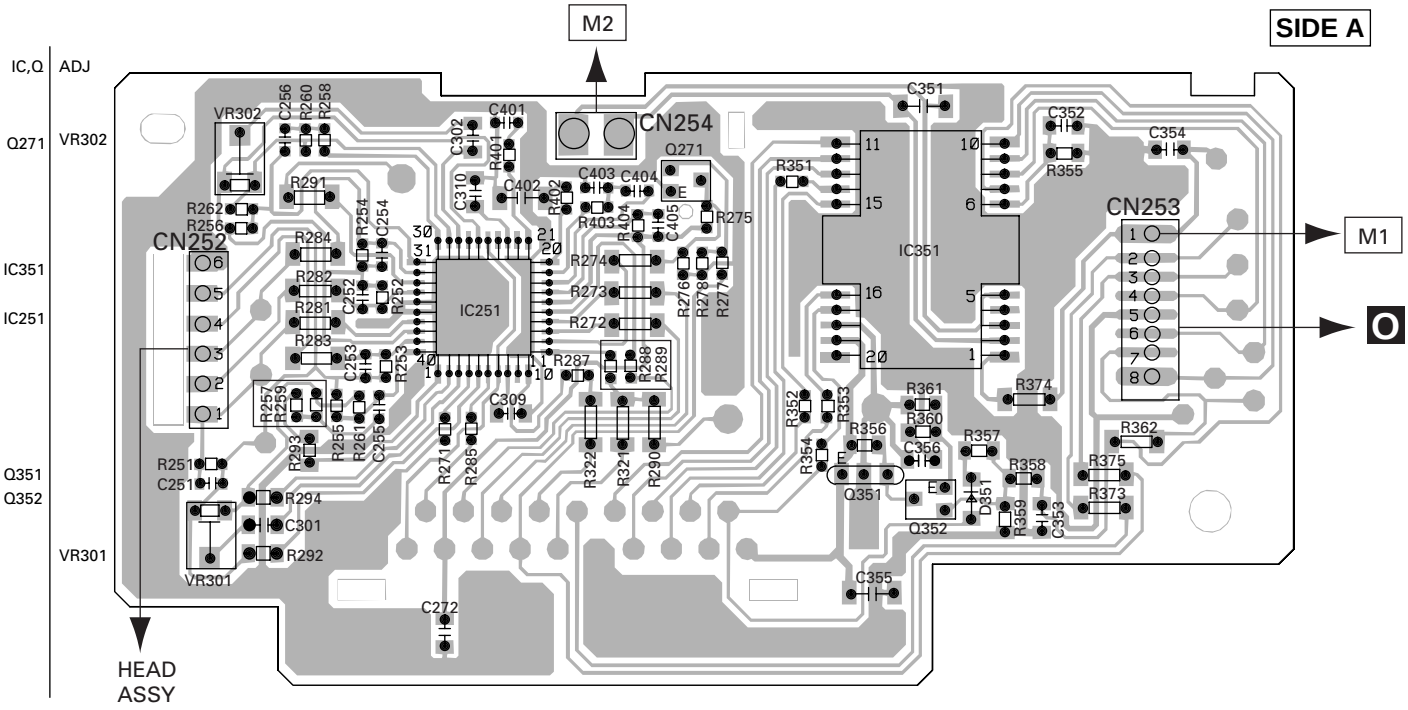
I PCB UNIT(E)

SIDE B

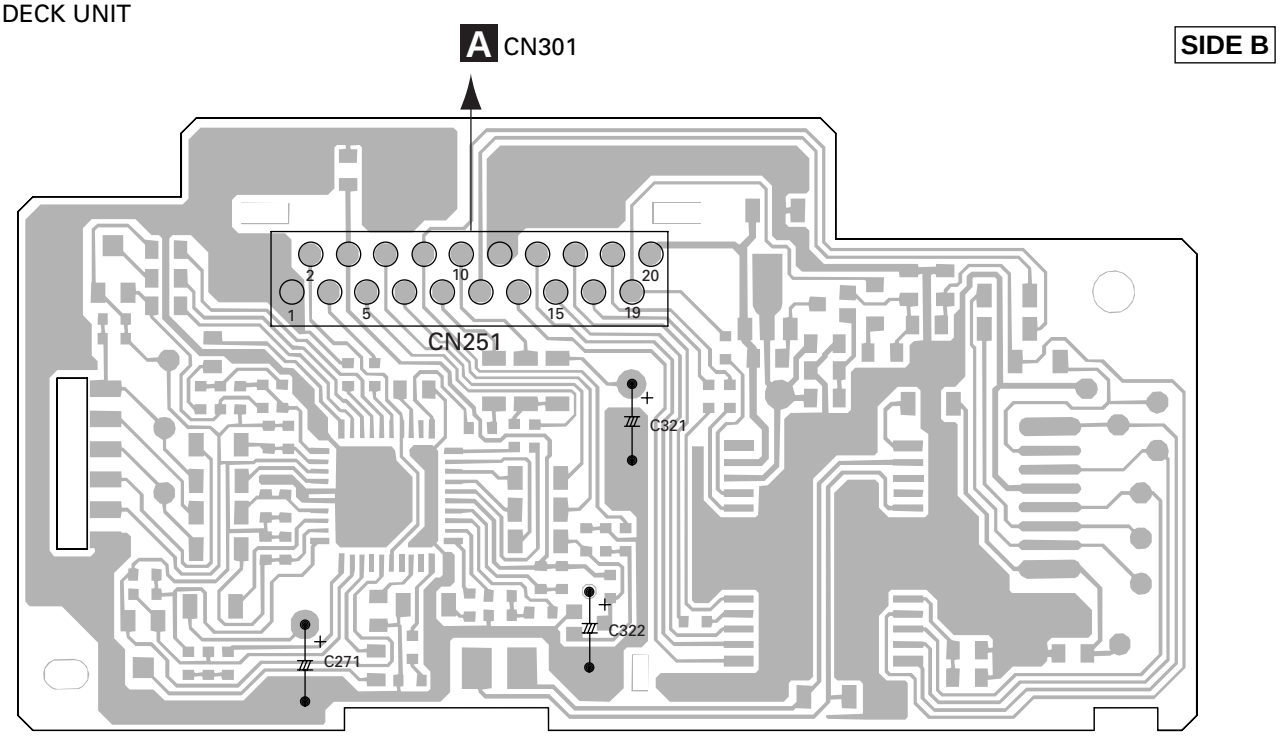


4.14 DECK UNIT

N DECK UNIT



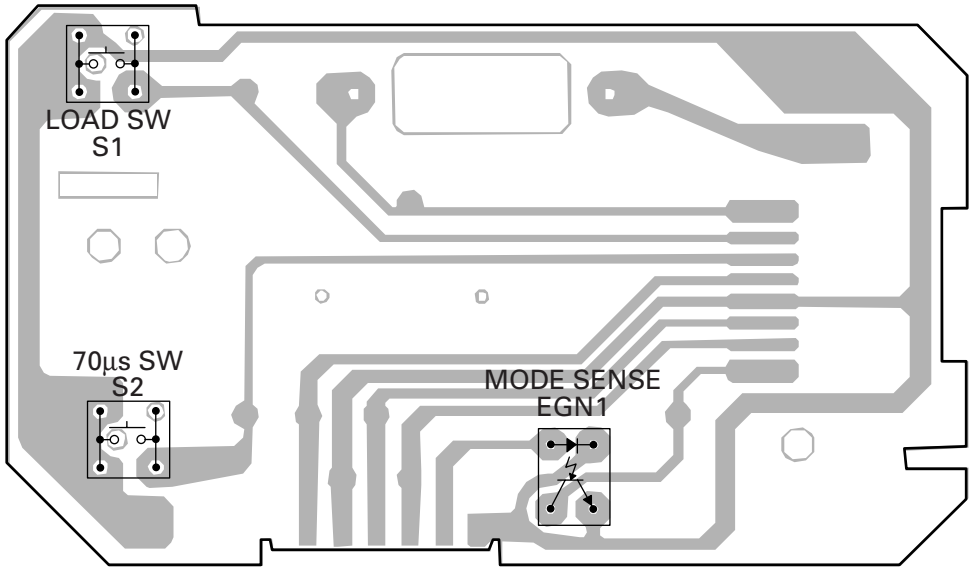
N DECK UNIT



4.15 PCB UNIT

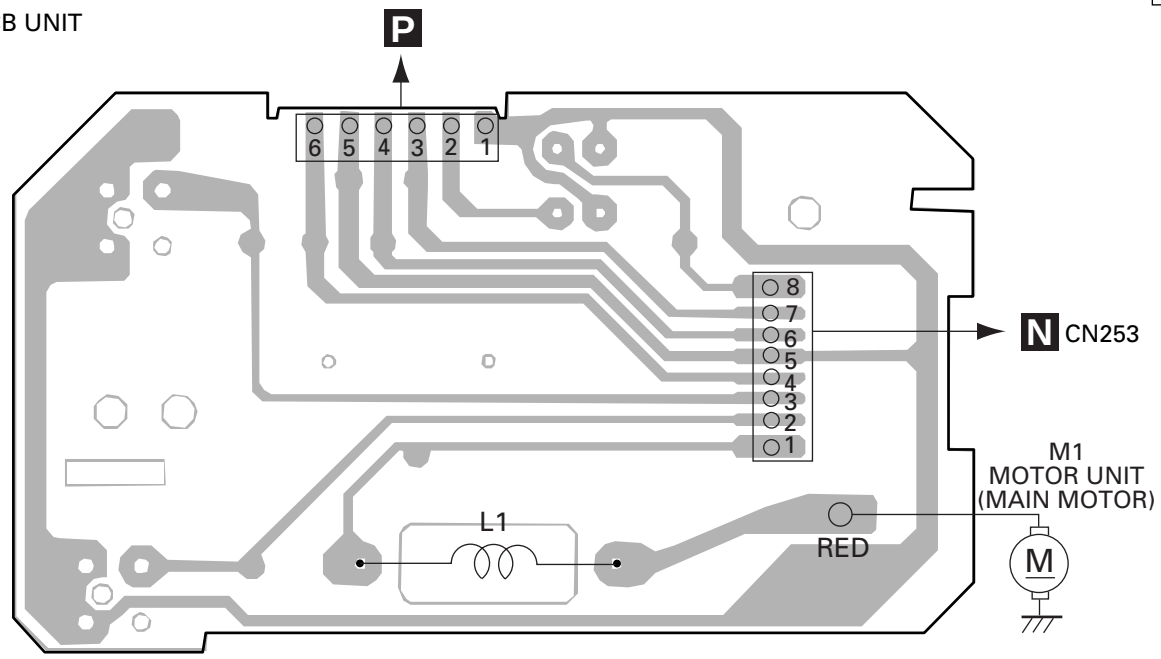
O PCB UNIT

SIDE A



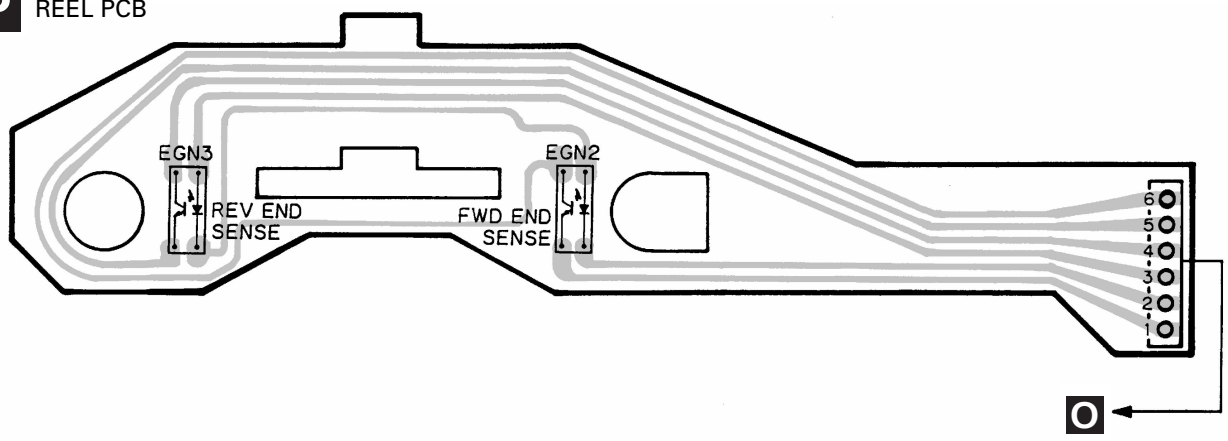
SIDE B

O PCB UNIT



4.16 REEL PCB

P REEL PCB



O **P**

5. ELECTRICAL PARTS LIST

NOTES:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

A Unit Number : CWM6847
Unit Name : Main Unit

MISCELLANEOUS

=====Circuit Symbol and No.		===Part Name	Part No.
IC	301	IC	NJM2068MD
IC	302	IC	NJM2068MD
IC	303	IC	NJM2068MD
IC	305	IC	TC74HC4066AF
IC	601	IC	PD5556B
IC	602	IC	HA12187FP
IC	603	IC	S-80730ANDT
IC	701	IC	PD5575B
Q	301	Transistor	DTC343TK
Q	302	Transistor	DTC343TK
Q	303	Transistor	DTC343TK
Q	304	Transistor	DTC343TK
Q	305	Transistor	DTC343TK
Q	306	Transistor	DTC343TK
Q	307	Transistor	DTC343TK
Q	308	Transistor	DTC343TK
Q	309	Transistor	DTA114EK
Q	601	Transistor	2SA1162
Q	602	Transistor	DTA114EK
Q	603	Transistor	DTA114EK
Q	701	Transistor	DTA144EK
Q	702	Transistor	DTA114EK
Q	801	Transistor	DTC114EK
Q	804	Transistor	2SD1664
Q	805	Chip Transistor	2SC2712
Q	806	Chip Transistor	2SC2712
Q	807	Chip Transistor	2SC2712
Q	808	Transistor	2SB1132
Q	809	Transistor	2SB1185
Q	811	Transistor	2SB1185
Q	812	Transistor	2SB1185
Q	813	Transistor	2SA1162
Q	814	Transistor	2SA1162
Q	816	Transistor	2SD2226K
Q	817	Chip Transistor	2SC2712
Q	822	Transistor	2SB1132
Q	823	Transistor	DTC123YK
Q	824	Transistor	DTA114EK
Q	825	Transistor	2SA1162
Q	826	FET	2SJ517
Q	827	Transistor	DTC123YK
Q	828	Transistor	DTA114EK
Q	829	FET	2SJ517
Q	830	Transistor	DTC123YK
Q	831	Chip Transistor	2SC2712
Q	833	Transistor	DTC114EK
Q	852	Transistor	IMX1
Q	854	Transistor	IMX1
Q	856	Transistor	IMD3A
D	301	Diode	UDZ20(B)
D	302	Diode	UDZ20(B)
D	303	Diode	UDZ20(B)
D	304	Diode	UDZ20(B)
D	305	Diode	HZU4LL(C)
D	601	Diode	1SS355
D	605	Diode	1SS355
D	608	Diode	1SS355
D	609	Diode	1SS355
D	610	Diode	1SS355
D	611	Diode	UDZ18(B)
D	612	Diode	UDZ18(B)
D	701	Diode	1SS355
D	801	Diode	1SS355
D	802	Diode	UDZS5R6(B)
D	803	Diode	ERC05-10BE3
D	804	Diode	1SS355
D	805	Diode	UDZ20(B)
D	806	Diode	ERA15-02VH
D	807	Diode	UDZS5R6(B)
D	808	Diode	HZU8R2(B1)
D	809	Diode	HZU8R2(B1)
D	810	Diode	HZU8R2(B1)
D	811	Diode	1SS355
D	812	Diode	HZU8R2(B1)
D	813	Diode	1SS355
D	814	Diode	HZU8R2(B3)
D	819	Diode	ERA15-02VH
D	821	Diode	HZU8R2(B3)
L	601	Inductor	LCTB4R7K3216
L	701	Inductor	LCTB4R7K3216
L	801	Choke Coil 0.8mH	CTH1239
TH	701	Thermistor	CCX1037
X	601	Radiator 10.00MHz	CSS1428
X	701	Radiator 6.290MHz	CSS1451

RESISTORS

R	301		RS1/10S122J
R	302		RS1/10S122J
R	303		RS1/10S473J
R	304		RS1/10S473J
R	307		RS1/10S123J
R	308		RS1/10S123J
R	309		RS1/10S183J
R	310		RS1/10S183J
R	311		RS1/10S223J
R	312		RS1/10S223J
R	313		RS1/10S911J
R	314		RS1/10S911J
R	315		RS1/10S473J
R	316		RS1/10S473J
R	317		RS1/10S911J
R	318		RS1/10S911J
R	319		RS1/10S223J
R	320		RS1/10S223J
R	321		RS1/10S223J
R	322		RS1/10S223J

=====Circuit Symbol and No.		===Part Name	Part No.
R	323		RS1/10S222J
R	324		RS1/10S222J
R	325		RS1/10S222J
R	326		RS1/10S222J
R	327		RS1/10S510J
R	328		RS1/10S510J
R	329		RS1/10S510J
R	330		RS1/10S510J
R	331		RS1/10S103J
R	332		RS1/10S153J
R	333		RS1/10S470J
R	334		RS1/10S470J
R	335		RS1/10S470J
R	336		RS1/10S470J
R	337		RS1/10S103J
R	338		RS1/10S392J
R	341		RS1/10S302J
R	342		RS1/10S302J
R	343		RS1/10S104J
R	344		RS1/10S104J
R	345		RS1/10S223J
R	355		RS1/10S472J
R	356		RS1/10S102J
R	602		RS1/10S473J
R	605		RS1/10S471J
R	608		RS1/10S102J
R	609		RS1/10S681J
R	610		RA3C102J
R	611		RA3C473J
R	612		RA2CQ102J
R	613		RS1/10S473J
R	616		RS1/10S473J
R	618		RS1/10S472J
R	619		RA2CQ102J
R	620		RA2CQ473J
R	621		RA3C102J
R	622		RA3C473J
R	623		RS1/10S102J
R	624		RS1/10S103J
R	625		RA3C102J
R	626		RA3C473J
R	627	1kΩ	CCN1120
R	628	47kΩ	CCN1131
R	629		RS1/10S102J
R	631		RA3C102J
R	632	1kΩ	CCN1120
R	633		RS1/10S473J
R	634		RS1/10S473J
R	635		RS1/10S102J
R	637		RA2CQ473J
R	638		RS1/10S102J
R	639		RA2CQ102J
R	640		RA3C102J
R	641	47kΩ	CCN1131
R	642		RS1/10S102J
R	643		RA3C102J
R	644		RS1/10S681J
R	645		RA3C102J
R	646		RA3C473J
R	649		RS1/10S473J
R	651		RS1/10S104J
R	652		RS1/4S101J
R	653		RS1/4S101J
R	654		RS1PMF680J
R	701		RS1/10S433J

=====Circuit Symbol and No.		===Part Name	Part No.
R	702		RS1/10S103J
R	703		RS1/10S222J
R	704		RS1/10S103J
R	705		RS1/10S102J
R	706		RA2CQ222J
R	707		RA2CQ103J
R	708	330Ω	CCN1116
R	709		RA2CQ222J
R	710		RS1/10S104J
R	711		RS1/10S331J
R	712		RS1/10S103J
R	713		RA2CQ102J
R	714		RA2CQ222J
R	715		RA2CQ103J
R	716		RA2CQ102J
R	717		RS1/10S102J
R	718		RS1/10S471J
R	719		RS1/10S102J
R	720		RA2CQ471J
R	722		RA2CQ222J
R	723		RA2CQ473J
R	724		RS1/10S102J
R	725		RA3C471J
R	726		RA2CQ102J
R	727		RA2CQ102J
R	728	470Ω	CCN1117
R	729	470Ω	CCN1117
R	730	470Ω	CCN1117
R	731		RS1/10S471J
R	732		RS1/10S912J
R	733		RS1/10S102J
R	734	2.2kΩ	CCN1121
R	735		RS1/10S273J
R	736		RS1/10S512J
R	737		RS1/10S104J
R	738		RS1/10S154J
R	739		RS1/10S103J
R	801		RS1/8S222J
R	802		RS1/8S472J
R	803		RS1/8S222J
R	804		RS1/8S472J
R	805		RS1/8S222J
R	806		RS1/8S472J
R	807		RS1/8S221J
R	809		RS1/10S473J
R	810		RS1/10S104J
R	811		RS1/10S473J
R	812		RS1/10S104J
R	813		RS1/10S473J
R	814		RS1/10S104J
R	815		RS1/10S223J
R	816		RS1/10S122J
R	820		RS1/10S123J
R	821		RS1/10S103J
R	822		RS1/10S103J
R	823		RS1/10S223J
R	824		RS1/10S102J
R	825		RS1/10S331J
R	826		RS1/10S103J
R	827		RS1/10S471J
R	828		RS1/10S102J
R	829		RS1/10S223J
R	830		RS1/10S221J
R	831		RS1/10S331J
R	832		RS1/10S471J

=====Circuit Symbol and No.		===Part Name	Part No.
R	833		RS1/10S102J
R	840		RS1/4S1R5J
R	841		RS1/4S1R5J
R	842		RS1/4S1R5J
R	843		RS1/4S1R5J
R	844		RS1/10S471J
R	845		RS1/10S471J
R	846		RS1/10S105J
R	847		RS1/10S361J
R	848		RS1/10S1501D
R	849		RS1/10S2701D
R	856		RS1/10S103J
R	857		RS1/10S102J
R	859		RS1/10S103J
R	860		RS1/10S103J
R	861		RS1/10S103J
R	862		RS1/10S102J
R	863		RS1/10S103J
R	864		RS1/10S102J
R	865		RS1/10S473J
R	866		RS1/10S104J
R	867		RS1/10S223J

CAPACITORS

C	301	4.7µF/35V	CCH1016
C	302	4.7µF/35V	CCH1016
C	305	4.7µF/35V	CCH1016
C	306	4.7µF/35V	CCH1016
C	307	4.7µF/35V	CCH1016
C	308	4.7µF/35V	CCH1016
C	309		CCSQCH330J50
C	310		CCSQCH330J50
C	311	4.7µF/35V	CCH1016
C	312	4.7µF/35V	CCH1016
C	313	4.7µF/35V	CCH1016
C	314	4.7µF/35V	CCH1016
C	315		CCSQCH330J50
C	316		CCSQCH330J50
C	317		CKSQYB331K50
C	318		CKSQYB331K50
C	319		CKSQYB682K50
C	320		CKSQYB682K50
C	321		CKSQYB682K50
C	322		CKSQYB682K50
C	323		CEALNP4R7M16
C	324		CEALNP4R7M16
C	325		CEALNP4R7M16
C	326		CEALNP4R7M16
C	327		CCSQCH101J50
C	328		CCSQCH101J50
C	329		CCSQCH101J50
C	330		CCSQCH101J50
C	331		CKSQYB104K50
C	333		CKSQYB103K50
C	334		CEJA101M6R3
C	335		CEJA101M16
C	336		CKSQYB104K50
C	337	4.7µF/35V	CCH1016
C	338	4.7µF/35V	CCH1016
C	341		CKSQYB104K50
C	342		CEAL4R7M16
C	343		CEAL100M16
C	601		CKSQYB102K50
C	603		CEAL100M16

=====Circuit Symbol and No.		===Part Name	Part No.
C	604		CKSQYB103K50
C	605		CKSQYB103K50
C	606		CCSQCH101J50
C	607		CCSQCH101J50
C	608		CCSQCH101J50
C	609		CCSQCH101J50
C	610		CCSQCH101J50
C	611		CCSQCH101J50
C	612		CCSQCH101J50
C	615		CCSQCH101J50
C	616		CCSQCH101J50
C	617		CCSQCH101J50
C	618		CCSQCH102J50
C	619		CCSQCH102J50
C	620		CCSQCH102J50
C	621		CCSQCH102J50
C	622		CCSQCH102J50
C	625		CKSQYB103K50
C	626		CKSQYB103K50
C	627		CKSQYB221K50
C	628		CKSQYB221K50
C	630		CKSQYB102K50
C	701		CKSQYB102K50
C	702		CKSQYB102K50
C	704		CKSQYB102K50
C	705		CKSQYB102K50
C	706		CKSQYB102K50
C	711		CKSQYB102K50
C	712		CKSQYB102K50
C	717		CKSQYB102K50
C	721		CKSQYB104K50
C	722		CEAL100M16
C	723		CKSQYB103K50
C	724		CKSQYB102K50
C	725		CKSQYB102K50
C	726		CKSQYB102K50
C	727		CKSQYB102K50
C	728		CCSQCH101J50
C	801		CKSQYB102K50
C	802		CEAL1R0M50
C	803		CKSQYB102K50
C	804	2200µF/16V	CCH1186
C	805		CKSQYB473K50
C	806		CKSQYB102K50
C	807		CEAL1R0M50
C	808		CKSQYB102K50
C	809	2200µF/16V	CCH1186
C	811		CCSQCH101J50
C	812		CKSQYB103K50
C	813		CEJA330M10
C	814		CEAL1R0M50
C	815		CEAL1R0M50
C	816		CKSQYB103K50
C	817		CEJA101M16
C	818		CKSQYB103K50
C	819	100µF/10V	CCH1282
C	820		CKSQYB103K50
C	824		CKSQYB472K50
C	825	100µF/10V	CCH1282
C	829		CKSQYB103K50
C	831		CKSQYB103K50
C	833		CKSQYB102K50
C	834		CKSQYB102K50
C	835		CKSQYB102K50
C	838		CEAT102M16

=====Circuit Symbol and No.		===Part Name	Part No.
C	893		CKSQYB222K50
C	894		CKSQYB222K50
C	896		CKSQYB222K50
C	897		CKSQYB222K50

B Unit Number : CWM6872
Unit Name : SW Unit

MISCELLANEOUS

D	921	LED	SML210FT
D	922	LED	SML210FT
D	923	LED	SML210FT
D	924	LED	SML210FT
D	925	LED	SML210FT
S	924	Switch(DCLOSE)	CSN1052
IL	923	Lamp 8V 60mA	CEL1649
IL	924	Lamp 8V 60mA	CEL1649

RESISTORS

R	931		RS1/8S331J
R	932		RS1/8S331J
R	933		RS1/8S331J
R	934		RS1/8S331J
R	935		RS1/8S331J

CAPACITORS

C	921		CKSQYB104K25
C	922		CKSQYB104K25
C	923		CKSQYB102K50
C	924		CKSQYB102K50
C	925		CKSQYB102K50
C	926		CKSQYB104K25
C	927		CKSQYB104K25
C	928		CKSQYB104K25

C Unit Number : CWM6860
Unit Name : Keyboard Unit

MISCELLANEOUS

IL	901	Lamp 8V 60mA	CEL1531
IL	902	Lamp 8V 60mA	CEL1531
IL	903	Lamp 8V 60mA	CEL1531
IL	904	Lamp 8V 60mA	CEL1531
IL	905	Lamp 8V 60mA	CEL1531
IL	906	Lamp 8V 60mA	CEL1531
IL	907	Lamp 8V 60mA	CEL1531
VR	901	Switch	CSD1058
VR	902	Encoder	CSD1053

RESISTORS

R	992	0Ω	CCN1110
R	994		RS1/10S0R0J
R	996		RS1/10S0R0J

E Unit Number : CWX2421
Unit Name : CD Core Unit(Servo Unit)

MISCELLANEOUS

IC	101	IC	UPC2572GS
IC	201	IC	UPD63702AGF
IC	301	IC	BA5986FM
Q	101	Transistor	2SD1664
Q	102	Transistor	UMD2N
D	301	Diode	1SR154-400
L	201	Inductor	LCYBR15J1608
L	202	Inductor	LCYBR15J1608
X	201	Ceramic Resonator 16.934MHz	CSS1457
EF	201	Filter	CCG1076
EF	202	Filter	CCG1076

=====Circuit Symbol and No.		===Part Name	Part No.

RESISTORS

R	101	RS1/8S100J
R	102	RS1/8S120J
R	104	RS1/16S822J
R	105	RS1/16S682J
R	106	RS1/16S183J
R	107	RS1/16S822J
R	108	RS1/16S333J
R	109	RS1/16S683J
R	110	RS1/16S134J
R	111	RS1/16S273J
R	112	RS1/16S222J
R	113	RS1/16S103J
R	114	RS1/16S103J
R	115	RS1/16S102J
R	116	RS1/16S163J
R	117	RS1/16S163J
R	120	RS1/16S101J
R	121	RS1/16S101J
R	201	RS1/16S104J
R	202	RS1/16S103J
R	203	RS1/16S332J
R	204	RS1/16S752J
R	205	RS1/16S752J
R	206	RS1/16S101J
R	250	RS1/16S331J
R	251	RS1/16S331J
R	252	RS1/16S331J
R	253	RS1/16S331J
R	254	RS1/16S331J
R	255	RS1/16S471J
R	256	RS1/16S471J
R	263	RS1/16S471J
R	270	RS1/16S101J
R	271	RS1/16S101J
R	274	RS1/16S471J
R	277	RS1/16S471J
R	301	RS1/16S103J
R	302	RS1/16S153J
R	303	RS1/16S103J
R	304	RS1/16S273J
R	305	RS1/16S103J
R	306	RS1/16S752J
R	307	RS1/16S103J
R	308	RS1/16S103J
R	309	RS1/16S471J
R	311	RS1/16S471J

CAPACITORS

C	101	CEV101M6R3
C	102	CKSQYB104K16
C	103	CEV470M6R3
C	104	CKSQYB334K16
C	105	CCSRCH240J50
C	106	CKSRYB222K50
C	107	CEV4R7M35
C	108	CKSRYB273K25
C	109	CCSRCH101J50
C	110	CKSQYB104K16
C	111	CKSRYB332K50
C	112	CKSQYB473K16
C	113	CKSRYB103K25
C	114	CKSRYB391K50
C	115	CCSRCH121J50

=====Circuit Symbol and No.		===Part Name	Part No.
C	116		CKSRYB682K50
C	117		CKSRYB333K16
C	118		CKSQYB334K16
C	119		CKSQYB334K16
C	120		CKSQYB334K16
C	121		CKSQYB334K16
C	122		CKSQYB104K16
C	123		CKSRYB472K50
C	124		CKSQYB104K16
C	125		CCSRCH5R0C50
C	126		CKSRYB153K25
C	127		CKSRYB102K50
C	201		CKSQYB334K16
C	202		CKSQYB104K16
C	203		CKSQYB104K16
C	204		CKSRYB471K50
C	207		CKSQYB683K16
C	208		CKSRYB821K50
C	209		CKSRYB273K25
C	210		CKSQYB334K16
C	211		CKSQYB334K16
C	212		CKSQYB334K16
C	213	10µF/10V	CCH1349
C	301		CEV101M10
C	302		CEV101M10

G Unit Number : CWX2422
Unit Name : CD Core Unit(STS Unit)

MISCELLANEOUS

IC	501	IC	CXD2511R
IC	502	IC	MSM514400DP-60TS
IC	601	IC	AK4321VF
IC	701	IC	BA05SFP
IC	801	IC	LB1836M
IC	802	IC	LB1836M
Q	801	Transistor	DTA123JK
Q	802	Transistor	UN2211
D	701	Diode	1SR154-400
D	702	Diode	1SR154-400
D	703	Diode	1SS355
D	704	Diode	1SS355
D	705	Diode	1SS355
D	706	Diode	1SS355
D	707	Diode	1SS355
D	708	Diode	1SS355
S	801	Spring Switch(LOAD)	CSN1052
S	802	Spring Switch(DOOR)	CSN1052
S	803	Spring Switch(MODE)	CSN1052
EF	701	Filter	CCG1051
EF	702	Filter	CCG1051
EF	703	Filter	CCG1051

RESISTORS

R	501		RS1/16S102J
R	502		RS1/16S202J
R	503		RS1/16S392J
R	504		RS1/16S822J
R	505		RS1/16S163J
R	506		RS1/16S512J
R	507		RS1/16S182J
R	508		RS1/16S222J
R	509		RS1/16S102J
R	510		RS1/16S102J
R	511		RS1/16S102J
R	512		RS1/16S102J
R	513		RS1/16S102J
R	514		RS1/16S471J
R	601		RS1/16S101J

=====Circuit Symbol and No.		===Part Name	Part No.
R	602		RS1/16S101J
R	603		RS1/16S471J
R	604		RS1/16S471J
R	702		RS1/10S100J
R	716		RS1/16S471J
R	717		RS1/16S471J
R	718		RS1/16S471J
R	801		RS1/10S102J

CAPACITORS

C	501		CKSQYB334K16
C	502		CKSQYB334K16
C	503		CKSQYB334K16
C	504		CCSRCH471J50
C	506		CCSRCH221J50
C	601		CKSQYB334K16
C	602		CCSRCH221J50
C	603		CKSQYB334K16
C	604		CKSQYB334K16
C	605		CSZSR100M10
C	606		CKSQYB334K16
C	701	10µF/10V	CCH1349
C	702		CEVL101M6R3
C	703		CKSQYB334K16
C	704		CKSQYB334K16
C	705		CCSRCH151J50
C	706		CCSRCH151J50
C	707		CCSRCH151J50
C	801		CKSQYB104K25
C	802		CKSQYB104K25
C	803		CEVL220M16

L Unit Number :
Unit Name : PCB Unit(A)

D	891	Chip LED	CL202IRXTU
D	892	Chip LED	CL202IRXTU

H Unit Number :
Unit Name : PCB Unit(B)

S	886	Spring Switch(ELV Home)	CSN1052
S	887	Spring Switch(Clamp)	CSN1051

J Unit Number :
Unit Name : PCB Unit(C)

Q	881	Photo-transistor	CPT230SCTD
D	883	Chip LED	CL202IRXTU
S	885	Spring Switch(MAX DETECT)	CSN1052

M Unit Number :
Unit Name : PCB Unit(D)

Q	851	Photo-transistor	CPT230SCTD
Q	852	Photo-transistor	CPT230SCTD

I Unit Number :
Unit Name : PCB Unit(E)

R	856		RS1/8S911J
R	857		RS1/8S821J

F Unit Number :
Unit Name : Motor PCB(A)

Q	1	Photo-interrupter	RPI-221
M	1	Motor Unit(Cam Gear)	CXB6929
M	3	Motor Unit(ELV)	CXB3175

=====Circuit Symbol and No.		===Part Name	Part No.

D Unit Number :
Unit Name : Motor PCB(B)

M	4	Motor Unit(Carriage)	CXB3178
M	5	Motor(Spindle)	CXM1120

K Unit Number :
Unit Name : Load Motor PCB

M	2	Motor Unit(Load)	CXB3177

N Unit Number :EWM1027
Unit Name :Deck Unit

MISCELLANEOUS

IC	251	IC	HA12216F
IC	351	IC	PA2020A
Q	271	Transistor	2SC4116
Q	351	Transistor	2SB1260
Q	352	Transistor	2SC4102
D	351	Diode	1SS355
VR	301	Semi-fixed 33kΩ(B)	CCP1280
VR	302	Semi-fixed 33kΩ(B)	CCP1280

RESISTORS

R	255		RS1/16S181J
R	256		RS1/16S181J
R	257		RS1/16S183J
R	258		RS1/16S183J
R	259		RS1/16S133J
R	260		RS1/16S133J
R	261		RS1/16S274J
R	262		RS1/16S274J
R	271		RS1/16S183J
R	272		RS1/8S0R0J
R	273		RS1/8S0R0J
R	274		RS1/8S0R0J
R	275		RS1/16S473J
R	276		RS1/16S104J
R	277		RS1/16S224J
R	278		RS1/16S104J
R	281		RS1/8S0R0J
R	282		RS1/8S0R0J
R	283		RS1/8S0R0J
R	284		RS1/8S0R0J
R	285		RS1/16S0R0J
R	288		RS1/16S0R0J
R	289		RS1/16S0R0J
R	291		RS1/8S0R0J
R	292		RS1/10S0R0J
R	293		RS1/10S0R0J
R	294		RS1/10S0R0J
R	321		RS1/8S0R0J
R	351		RS1/16S102J
R	352		RS1/16S102J
R	353		RS1/16S102J
R	354		RS1/16S102J
R	355		RS1/10S274J
R	356		RS1/10S202J
R	357		RS1/10S472J
R	358		RS1/10S103J
R	359		RS1/10S103J
R	360		RS1/10S102J
R	361		RS1/10S622J
R	362		RS1/8S181J

=====Circuit Symbol and No.		===Part Name	Part No.

R	373		RS1/8S0R0J
R	374		RS1/8S0R0J
R	375		RS1/8S0R0J
R	401		RS1/16S123J
R	402		RS1/16S332J
R	403		RS1/16S911J
R	404		RS1/16S274J

CAPACITORS

C	251		CKSRYB391K50
C	252		CKSRYB391K50
C	253		CKSRYB391K50
C	254		CKSRYB391K50
C	255		CKSRYB103K50
C	256		CKSRYB103K50
C	271		CEJA1R0M50
C	272		CKSQYB104K16
C	301		CKSQYB104K16
C	302		CKSQYB104K16
C	309		CKSQYB104K16
C	310		CKSQYB104K16
C	351		CKSYB224K25
C	352		CKSQYB392K50
C	353		CKSQYB103K50
C	354		CKSQYB103K50
C	355		CKSYB104K50
C	356		CKSQYB103K50
C	401		CKSRYB472K50
C	402		CKSYB334K25
C	403		CKSRYB223K25
C	404		CKSRYB103K50
C	405		CKSRYB333K16

O Unit Number :
Unit Name : PCB Unit

L	1	Inductor	ETH0002
S	1	Switch (LOAD)	ESG1004
S	2	Switch (70µs)	ESG1004
EGN	1	Photo-Interrupter	EGN1005

P Unit Number :
Unit Name : Reel PCB

EGN	2	Photo-Interrupter	EGN1006
EGN	3	Photo-Interrupter	EGN1006

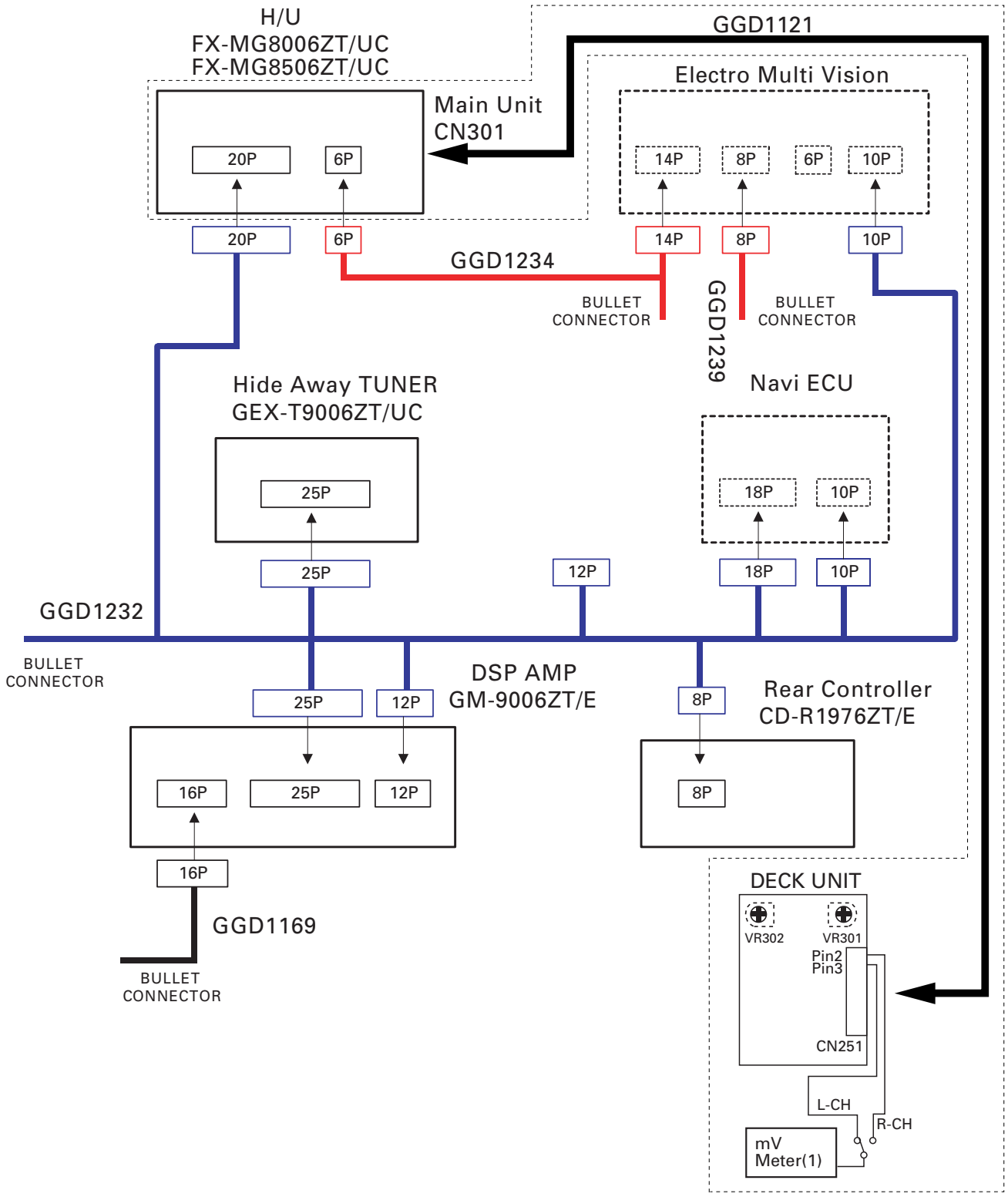
Miscellaneous Parts List

		Pickup Unit(Service)(P8)	CXX1313
C	1		CEAL4R7M35
M	1	Motor Unit (Main)	EXA1499
M	2	Motor Unit (Sub)	EXA1382
HD	1	Head Assy	EXA1594

6. ADJUSTMENT

6.1 CASSETTE SECTION

● **Connection Diagram**



DOLBY NR ADJUSTMENT

No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz,200nwb/m)	VR301(Lch),VR302(Rch)	mV Meter(1) : –8.24dBm(300mV)±1dB (DOLBY NR Switch : OFF)

6.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

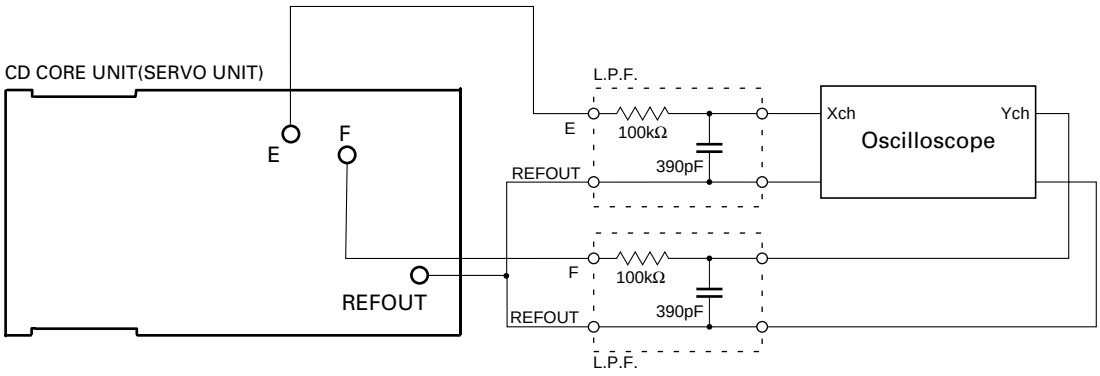
• **Note :**
The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

• **Purpose :**
To check that the grating is within an acceptable range when the PU unit is changed.

• **Symptoms of Mal-adjustment :**
If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• **Method :**

• Measuring Equipment	• Oscilloscope, Two L.P.F.
• Measuring Points	• E, F, REFOUT
• Disc	• ABEX TCD-784
• Mode	• TEST MODE



• **Checking Procedure**
1. In test mode, load the disc and switch the 5V regulator on.
2. Using the SEEK UP and SEEK DOWN buttons, move the PU unit to the innermost track.
3. Press key **5** to close focus, the display should read "91". Press key **3** to implement the tracking balance adjustment the display should now read "81". Press key **5** 4 times. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

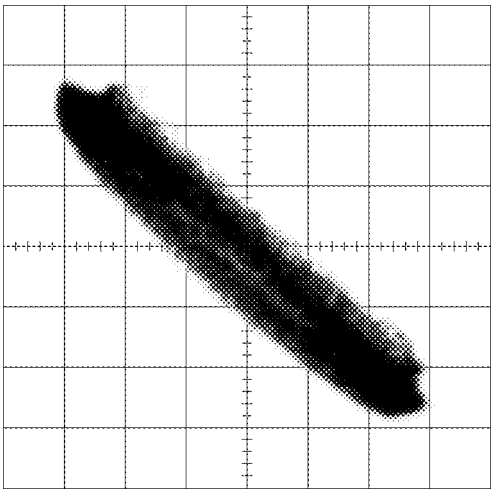
• **Note**
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• **Hint**
Reloading the disc changes the clamp position and may decrease the "wobble".

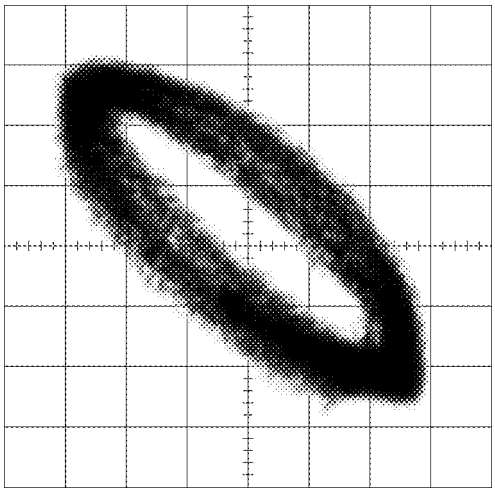
Grating waveform

Ech → Xch 20mV/div, AC
Fch → Ych 20mV/div, AC

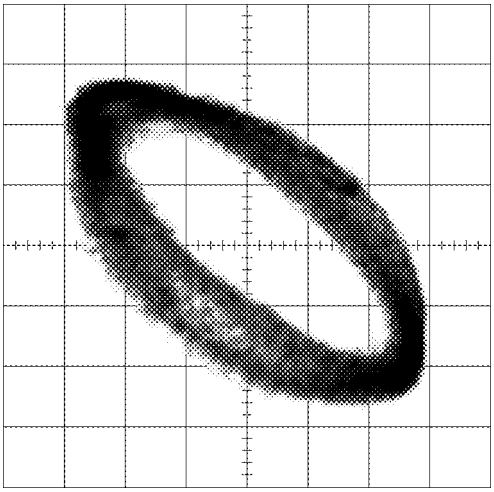
0°



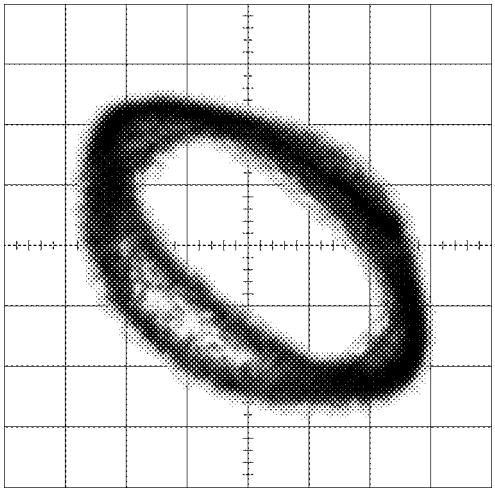
30°



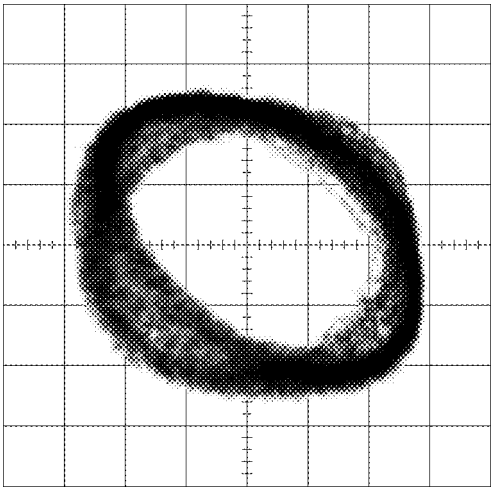
45°



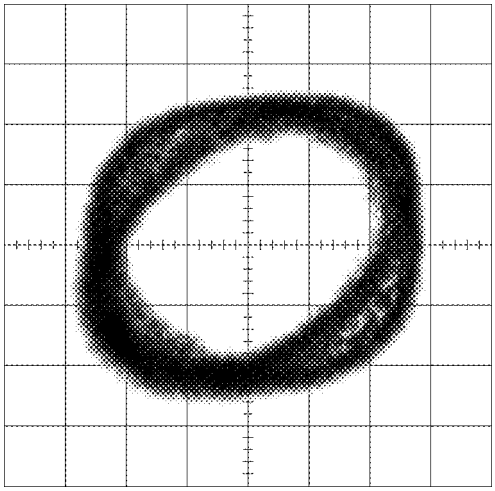
60°



75°



90°



7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

● CD Test Mode

1) Precautions on Adjustment

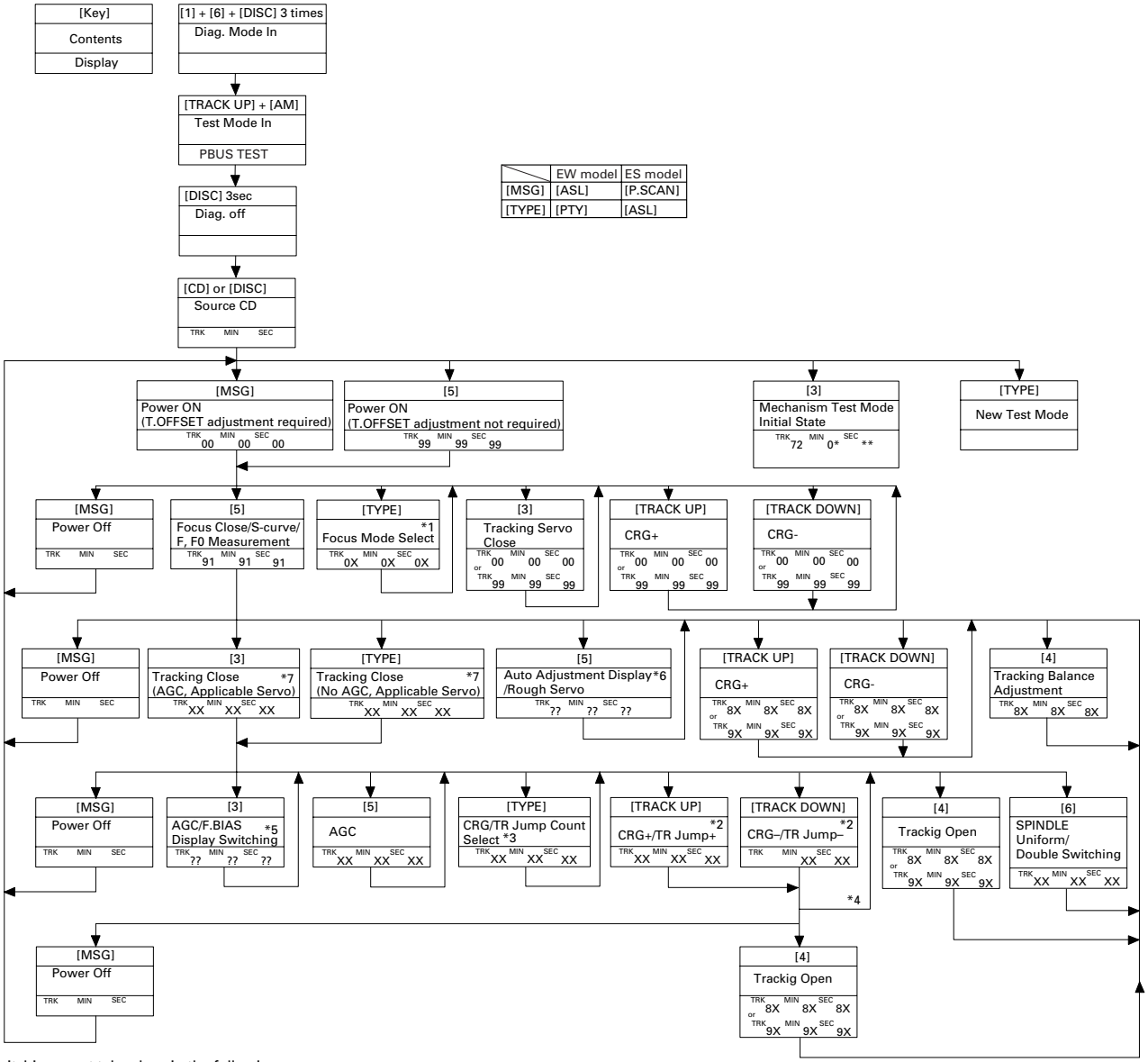
- The unit employs a single voltage (+5V) for the regulator, thus the reference potential of the signal is RFOUT (approximately 2.5V) rather than GND.
  Inadvertent contact of REFOUT and GND during adjustment can result not only in disabling normal potential measurement but also in exposing the pickup to strong impacts due to malfunctioning of the servo. Therefore, you are requested to observe the following precautions.
- Make sure that the negative probe of the measuring instrument is not connected to RFOUT or GND. Special care must be exercised so that the channel 1 negative probe may not be connected to the oscilloscope and the channel 2 negative probe to GND. Since the frame of the measuring instrument is usually at the same potential as the negative probe, the frame of the measuring instrument must be changed to floating status.
  When RFOUT is inadvertently connected to GND, you must immediately turn off the regulator or power supply.
- The regulator must be turned off before mounting or dismounting filters or wiring materials.
- You should not start adjustment or measurement immediately after the regulator is turned on. It is recommended to run the player for approximately one minute so that it may stabilize.
- When the test mode is turned on, various protective functions from the software become unavailable. Thus, you must make sure that undesirable electric or mechanical shocks are not be given to the system.
- This model employs a photo-transistor for detecting discs at their loading or ejection. Thus, if its outer case is removed during repair work and internal parts are exposed to light of strong intensity, malfunctions including the following can result:
  * The eject button becomes inoperable during play. Pressing the eject button does not eject a disc and play is continued.
  * Loading becomes unavailable.

  If a malfunction is recognized, appropriate remedial actions must be taken. Such actions include changing the light source position, changing the unit position and applying a cover to the photo-transistor.
- When you press the EJECT key to eject a disc, you must not touch any other key until the ejection is complete.
- If you press the TRACK UP or TRACK DOWN for the focus search in the test mode, you must turn the power off immediately. (Otherwise, the lens will be forced to stick to the top or bottom, potentially resulting in the burning of the actuator.)

2) Description of the Test Mode

- Turning on the Test Mode
  See page 64.
- Ending the Test Mode
  Apply the reset (the reset will be applied three minutes after the power is turned from off).
- Operation of TR JUMPs (except 100TR) continues after your finger has left the key. CRG, MOVE and 100TR JUMP are forced to the tracking close mode as soon as the key is released.
- Turning the power on or off resets the JUMP MODE to the Single TR.

● CD Player Flow Chart



Switching must take place in the following sequence.

*1) Switching must take place in the following sequence.

Focus Close (MIN 00 SEC 00) → S.Curve Check (MIN 01 SEC 01) → Focus EQ Measurement. (MIN 02 SEC 02) → (MIN 99 SEC 99)

*2) Single TR /4TR / 10TR / 32TR / 100TR

*3) Switching must take place in the following sequence.

Single TR 9X(8X):91(81) → 4 TR 92(82) → 10 TR 93(83) → 32 TR 94(84) → 100 TR 95(85) → CRG Move 96(86)

*4) It applies to the CRG Move and 100TR Jump alone.

*5) Switching must take place in the following sequence.

Min/Sec (or Track No.) → F.AGC Gain → T.AGC Gain → F. BIAS Setting

(AGC Gain = (Current value/Initial value) x 20)

*6) Switching must take place in the following sequence.

F.Cancel Display → T.Offset Display → T.Bal Display → Rough Servo.

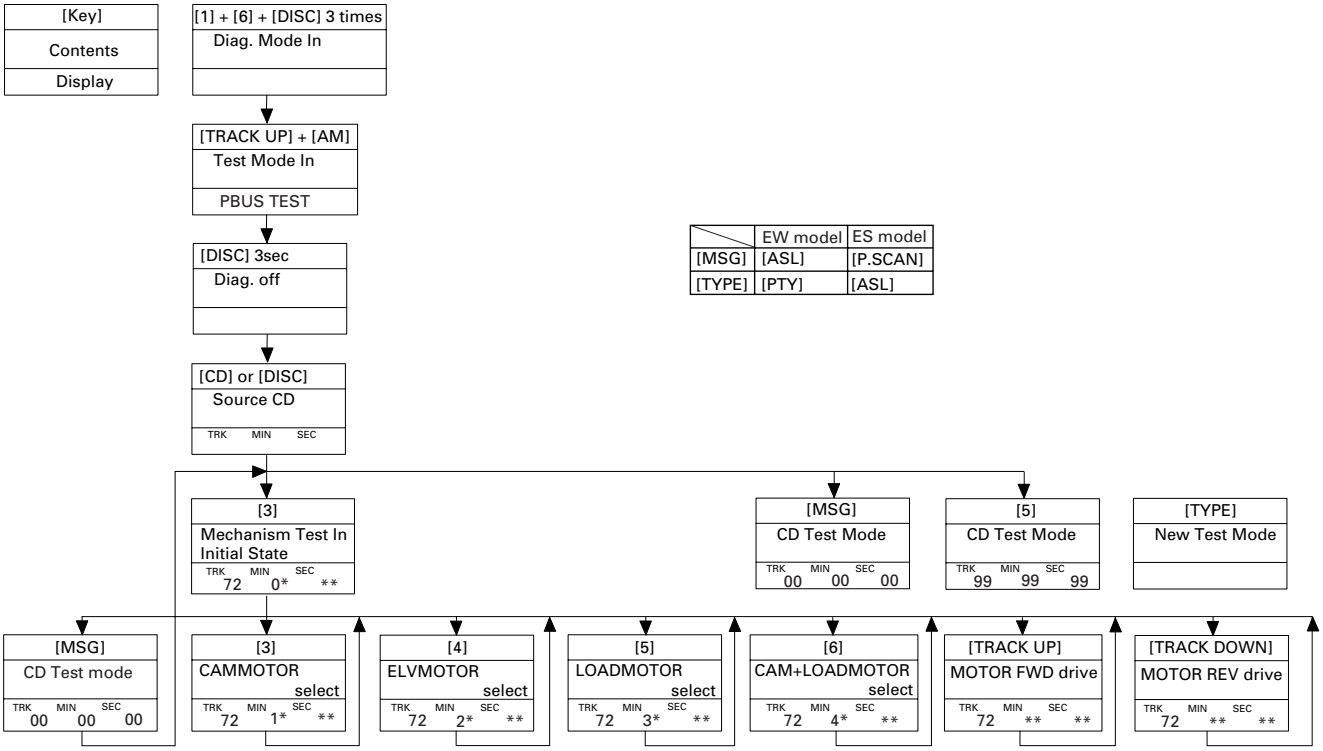
(F.Bias value, F.Cancel value, T.Offset value, T.Bal value
= (Upper 8 bits of the setting (7F[H] to 80[H] + 128)/4
= 63[D] to 32[D] to 00[D]).

*7) Sound is unavailable even after the tracking has been closed (this trouble results when the IC for the STS is not controlled in the test mode).

[Key]	Operation	
	Test Mode	New Test Mode
[MSG] B0H	Power ON/OFF	Error occurrence time/ Cause display switching
[TRACK UP] B1H	CRG+/TR Jump+ (Toward outer perimeter)	Track+/FF
[TRACK DOWN] B2H	CRG-/TR Jump- (Toward inner perimeter)	Track-/REV
[3] B3H	Tracking Close/AGC gain, F.Bias adjustment value display switching	—
[4] B4H	Auto Tracking Balance adjustment/ Tracking Open	Mode
[5] B5H	Focus Close, S.Curve, F.EQ measurement/ Rough Servo/AGC	—
[6] B6H	Focus Open	RAMDOM
[TYPE] B8H	Focus Mode select/Tracking Close/ CRG*TR Jump Switching	Auto/Manual switching
[2] A8H	DISC UP	DISC UP
[1] A9H	DISC DOWN	DISC DOWN
[EJECT] D1-D6	DISC Eject	DISC Eject
[LOAD] 61-66	DISC Load	DISC Load

Note: •When you pressed the [TRACK UP] or [TRACK DOWN] key during the Focus Search, you must turn the power off immediately (otherwise, the lens can stick resulting in actuator damages).
- Operation of TR JUMPs other than 100TR is continued after your finger has left the key. CRG Move and 100TR Jump are forced to the Tracking Close Mode when the key is released.
- Powering on or off resets the Jump Mode to the Single TR (91).
- When ending the test mode, apply the reset (the reset is applied in three minutes from powering off).

● CD Mechanism Test Mode Flow Chart



	EW model	ES model
[MSG]	[ASL]	[P.SCAN]
[TYPE]	[PTY]	[ASL]

<Screen Display during Mechanism Test Mode>

TRK : 72

MIN : Upper (10th order): Type of motors selected
- 1* : CAM motor
- 2* : ELV motor
- 3* : LOAD motor
- 4* : CAM+LOAD motor

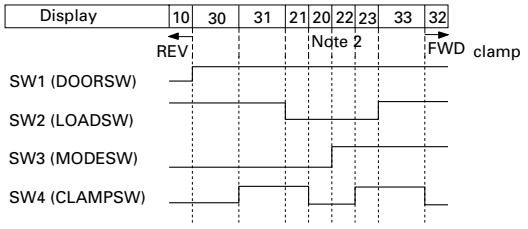
Lower (order of 1): State of DISC sensing phototransistor and switch

PH1	PH2	MAXSW	Display
L	L	L	*0
H	L	L	*1
L	H	L	*2
H	H	L	*3
L	L	H	*4
H	L	H	*5
L	H	H	*6
H	H	H	*7

L: Phototransistor is OPEN and switch is ON.
H: Phototransistor is CLOSE and switch is OFF.

SEC : ① When ELV motor is selected, ELV position is displayed
- 01: ELV at home position (1st disc).
- 10: ELV at a position other than home (2nd to 6th).
- 11: ELV moving to a specified position. * Note 1.
- 00: Not used (for an error)

② When CAM.LOAD motor is selected:
Indicates CAM SW (CAM gear) status.



❑ Operating Procedures:

1) Enter Diag and set on the CD test mode.
Subsequently, exit from Diag and set the source for the CD.

2) Turn on the Mechanism Test Mode using the [3] key.
TRK MIN SEC
72* X* **

3) Select the motor to be driven using the [3] to [6] keys.
TRK MIN SEC
72* X*

4) Press the [TRACK UP] or [TRACK DOWN] in this state to drive the selected motor.

[Key]	Operation
[MSG] B0H	Mechanism Test is initialized.
[TRACK UP] B1H	Valid only when the motor selected (using the [F3] to [F6] keys) is driven in FWD direction.
[TRACK DOWN] B2H	Valid only when the motor selected (using the [F3] to [F6] keys) is driven in REV direction.
[3] B3H	CAMMOTOR is selected.
[4] B4H	ELVMOTOR is selected.
[5] B5H	LOADMOTOR is selected.
[6] B6H	CAM + LOADMOTOR is selected.
[2] A8H	DISC UP
[1] A9H	DISC DOWN
[EJECT] 43H	DISC Eject
[LOAD] 60H	DISC Load

❑ Precautions

* The keys are inoperable as long as operation of the mechanism is continued.
* When driving the CAMMOTOR in 31 → 30 → 10 (in REV direction), the elevation position must be at the EJECT/LOAD position (the top position).

Note 1: When the elevation is situated at the Note 1 position, move of any motor other than the REV is disabled.

Note 2: Before performing the elevation, make sure that the CAM SW (switch) is set to a position between 22 and 20.
As a rule, driving of the ELV MOTOR must be started immediately after the CAMSW indication has changed from 22 to 20.

❍ Operating Procedures for Ejecting a Clamped Disc

① Select CAMMOTOR using [3], then press the [TRACK DOWN] while the disc is being clamped (CAMSW state is 32).
The CAMSW status indication sequentially changes through 32→33→23→22.

② When the disc to be ejected is not identical with the disc being clamped, select the [4] ELVMOTOR in the vicinity of where the display changes from 22 to 20, then match the elevation to the disc to be ejected according to the following procedures:
After selecting ELVMOTOR, lower the elevation until the ELV position display becomes 01 (1st disc) using the [TRACK DOWN].
Drive the elevation up until the display is changed to 10 using the [TRACK UP] . This is the elevation where the second disk is situated.
The next display of 10 tells you the elevation of the 3rd disc. Repeating this operation allows you to establish an elevation matching each disc. (When the elevation is driven from the 1st through 6th disc, the status display changes as 01→11→10→11→10→11→10→11→10→11→10.)
(When the disc to be ejected coincides with the disc being clamped, the above operations are not necessary.)

③ Select the [3] CAMMOTOR and then, using the [TRACK DOWN], drive it until the display changes from 20 (or 22) to 21 and 31.

④ Select the [4] ELVMOTOR, then drive the tray of the disc to be ejected up to the EJECT/LOAD position (using the [TRACK UP]).

⑤ Select the [6] CAM+LOADMOTOR, then drive it in the REV direction until the display changes from 31 to 30 and 10.
The door will open immediately before the display changes to 10 and part of the disc will be pushed out.

⑥ When 10 is displayed, select the [5] LOADMOTOR, then drive it in REV direction until the disc is completely ejected.

● Error No. Display

The error mode is turned on if a CD player becomes not playable or is forced to halt due to an error. Cause(s) of an error will be indicated with numerical characters. The error-number-display function is intended to facilitate the error analysis and resulting repair work.

(1) Error Code

Error code	Category	Troubles	Description/Cause(s)
10	Electricity	Carriage home error	Unable to move to or from inner perimeter → Failure on home switch or carriage move trouble.
11	Electricity	Focus search error	Unable to set a focus → Scratches or stains on backside of the disc, severe vibrations, CD-R is not written to the disc (it can happen on the backside of the disc).
12	Electricity	Spindle lock error Sub-code error	Spindle lock unavailable, sub-code unreadable → Failure on spindle, scratches on the disc, stains or strong vibrations.
14	Electricity	Mirror error	MIRR signal error continues for 500 msec or more → Stains on the disc or strong vibrations.
17	Electricity	Setup error	AGC protection cannot be turned on in time or focus can be easily lost → Scratches or stains on the disc or strong vibrations.
19	Electricity	Tracking Balance error	Tracking error level is low or tracking balance adjustment is unavailable → Failure on the pickup or tracking-error circuit.
30	Electricity	Search time-out	Target address can't be reached → Failure on the carriage/tracking or scratches on the disc.
A0	System	Error on power supply	Ground fault of power supply (VD) → Failure on switching transistor or failure of power supply.
–		High temperature stand-by	Temperature error(High temperature).

Error code	AVC-LAN Error code
11, 12, 14, 17, 19, 30	ERROR1
10	ERROR3
A0	ERROR4
–	WAIT

Code	Name	Description
20	Door OPENING	While the mechanism is in operation, should have been closed a door was opened.
21	Roller OFF time-out	4 seconds have elapsed before completing the roller OFF (the cam gear has not been rotated to the roller-OFF end position).
22	Roller SET time-out	4 seconds have elapsed before completing the roller SET.
	(Roller OFF time-out)	(During the roller OFF operation, 4 seconds have elapsed while the cam gear is rotating in REV direction.)
23	Door CLOSING	Door can't be closed when the roller OFF has ended.
24	Cam started from invalid position	The cam gear attempted to do roller OFF/roller SET from an invalid position.
26	Foreign substance on photo-transistor (before closing the door)	Foreign substance was found on the photo-transistor when closing the door after the loading is complete. An error will be indicated if the disc is still caught by the photo-transistor after 4 seconds of forced eject.
29	Roller being caught	Although the cam gear has been rotated up to the roller OFF end position, the roller can't be moved to the standby position.
41	Lift DOWN time-out	4 seconds have elapsed before completing the lift DOWN operation.
42	Lift UP time-out	4 seconds have elapsed before completing the lift UP operation.
	(Lift DOWN time-out)	(During the lift DOWN operation, 4 seconds have passed with the cam gear rotating in REV direction.)
45	Lift DOWN cam displacement	The lift DOWN complete cam gear has been displaced from its specified position.
52	EJECT time-out	8 seconds have elapsed before completing the EJECT operation. An error will be indicated if the disc is still caught by the photo-transistor after 4 seconds of forced eject.
57	Photo-transistor being caught after forced EJECT	When forced eject was employed for the Bup failure during loading or ejection,an error will be indicated if the disk is still caught by the photo-transistor after 4 seconds of forced eject.
61	CRGIN time-out	10 seconds have elapsed before completing CRGIN operation.
	(CRGOUT time-out)	(During CRGOUT operation, 10 seconds have elapsed with the cam gear rotating in REV direction.)
62	CRGOUT time-out	10 seconds have elapsed before completing the CRGOUT operation.
63	CRGOUT cam displacement	Position of the CRGOUT complete cam gear has been displaced.
71	ELVUP time-out	2 seconds have elapsed before completing 1-stage UP.
72	ELVDN time-out	2 seconds have elapsed before completing 1-stage DOWN.
74	ELV displacement	At the start of ELV, ELVSNS was not set to low. (In case of starting from the 1st floor, ELHOME was not set to low.)
75	ELV counting error	HLHOME was set to low though not on the 1st floor. (There is a conflict between the floor number stored on the microcomputer and the actual floor number.)
91	LOAD time-out	8 seconds have elapsed before completing the LOAD. An error will be indicated if the disc is still caught by the photo-transistor after 4 seconds of forced eject.
96	Settlement of foreign substance	Unauthorized foreign substance such as 8 cm disc has been loaded. An error will be indicated if the disc is still caught by the photo-transistor after 4 seconds of forced eject.

* AVC-LAN Error code : ERROR3

7.1.2 DIAGNOSIS MODE

1. How to Enter Diagnostic Test Mode

Diagnostic Test Mode

Speed = 0 km/h, PKB = ON

Tail OFF to ON to OFF to ON to OFF in this sequence pressing the information switch.

Entering from the head unit

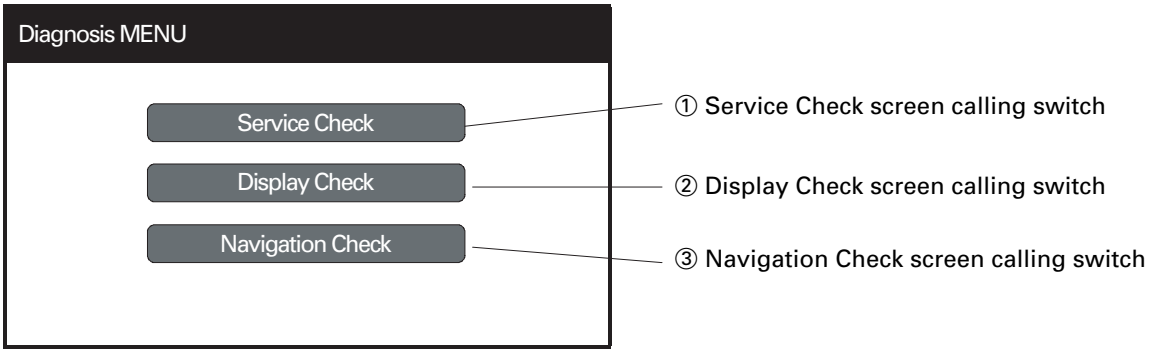
Press F1 and F6 (or F7 and F8) at the same time and press the Disc (or CD) button three times with (F1 pressed first).

2. How to exit from the diagnostic test mode

ACC OFF

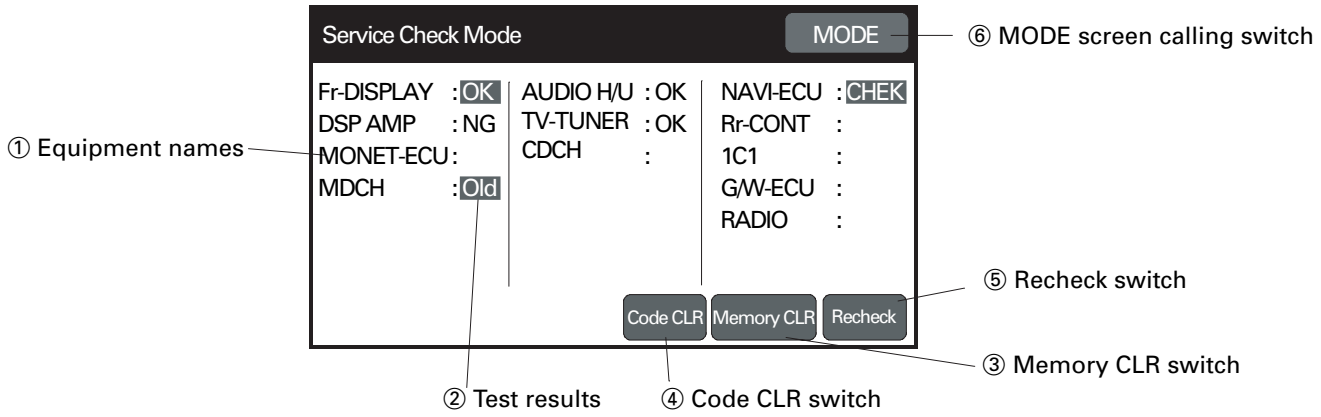
3. Diagnosis MENU

When the diagnostic test mode is entered, the Diagnosis MENU screen is displayed.



4. Service test

Use the function key on the Diagnosis menu screen to select Service Check Mode.



①	Equipment names	Names are displayed including succeeding fitted components.
②	Test results	Test results are displayed in the notation of "OK", "Check" and "Exchange". * "Exchange", "Check" and "Old Ver" are displayed as switches, and "Communication Diagnosis" and "Individual Diagnosis" are called according to the operation.
③	Memory CLR switch	Registered histories of the master equipment and all diagnostic memories of all equipment are cleared. (Long pressing of three seconds)
④	Code CLR switch	• Diagnostic memories of all equipment are cleared. • System test results are cleared and the contents of screen display of the test results are also cleared.
⑤	Recheck switch	The test is re-executed.
⑥	MODE screen calling switch	Processing returns to the MODE screen.

Displaying test results

The results tested based on the information such as responses of each equipment to "System Test Execution" and "Diagnostic Memory Presentation Request" and "Normal Diagnostic Notification" are displayed on the screen.

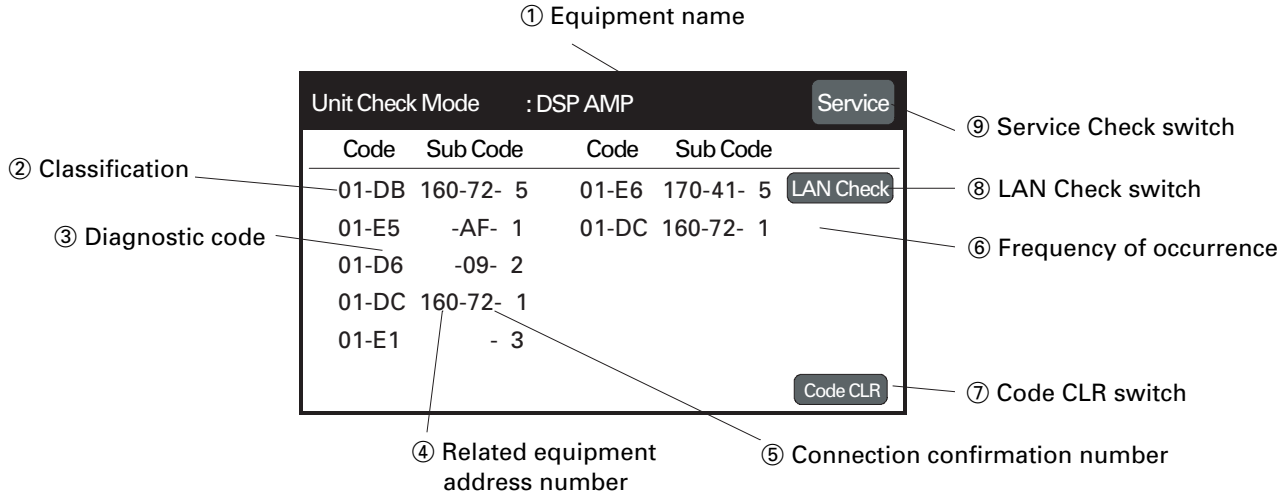
Display	Meaning
OK	No error code
Exchange	An error code indicating that exchange is judged to be necessary is entered.
Check	An error code indicating that diagnosis is judged to be necessary is entered.
Unconnected	Although registration is performed at ACC ON, there is no response when "Service Test" is started.
Old Ver	Some error code is entered in the object old diagnostic Ver. equipment.
No Response	Disconnection is occurring after "Service Test" has been started.

Calling the "Communication Diagnosis Detailed Information" or "Individual Diagnosis Detailed Information" screen

- When test results are "Exchange", "Check" or "Old Ver", this display is used as a switch to switch to the detailed display screen of "Communication Diagnosis" or "Individual Diagnosis" and to check the contents.
- If an "Individual Diagnosis" code is entered, the "Individual Diagnosis Detailed Information" screen is displayed.
- When an "Individual Diagnosis" code is not entered, the "Communication Diagnosis Detailed Information" screen is displayed.
  (Switching to both the detailed information screens is performed using the function key displayed on the screen.)

"Communication Diagnosis" detailed information screen

A "Communication Diagnosis" code is chosen and displayed in detail using the diagnostic code of the equipment displayed as "Check" in the Service Check results.

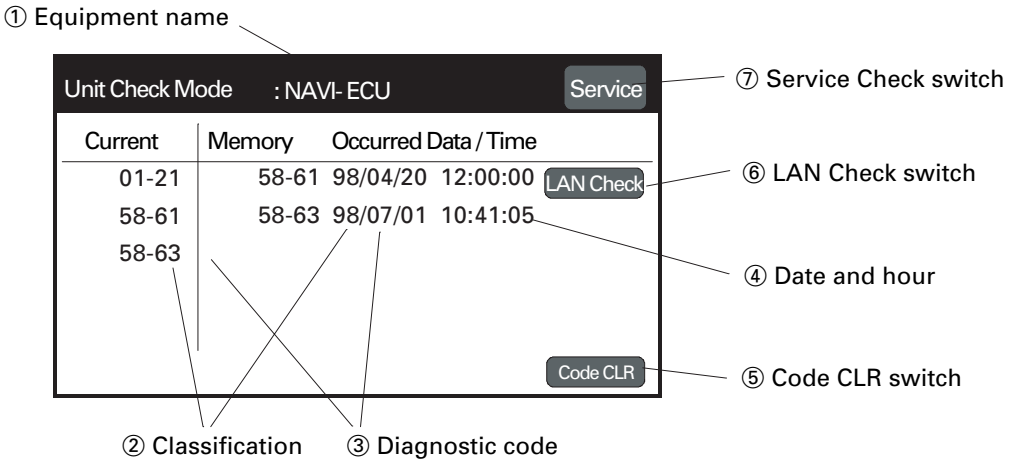


①	Equipment name	Object equipment name
②	Classification	Object logical address number
③	Diagnostic code	Diagnostic code
④	Related equipment address number	Physical address stored together with a diagnostic code (equipment code)
⑤	Connection confirmation number	Connection confirmation number stored together with a diagnostic code
⑥	Frequency of occurrence	Frequency of occurrence of the same diagnostic code stored together with a diagnostic code
⑦	Code CLR switch	The diagnostic information of object equipment is cleared. (Long pressing of three seconds)
⑧	LAN Check switch	The individual diagnosis detailed information screen is switched.
⑨	Service check switch	The service test screen is switched.

"Individual Diagnosis" detailed information screen

Error codes of the equipment displayed as "Exchange" are displayed on the Service Check screen by being divided into the current and previous errors.

Current error	• Error codes which were entered in the system test are displayed. (Up to six items)
Previous error	• Diagnostic memory collection results or contents of normal diagnostic notification are displayed up to six



①	Equipment name	Object equipment name
②	Classification	Object logical address number
③	Diagnostic code	Diagnostic code
④	Date and hour	Year, month, hour, minute and second at the time when a diagnostic code occurred (If time information is invalid, a blank is displayed.)
⑤	Code CLR switch	The diagnostic information of object equipment is cleared. (Long pressing of three seconds)
⑥	LAN Check switch	The Communication Diagnosis detailed information screen is switched.
⑦	Service Check switch	The service test screen is switched.

7.1.3 DISASSEMBLY

● **Removing the Case (Fig.1)**

1 Remove the two screws.

2 Remove the two screws and then remove the Guide.

3 Remove the two screws.

4 Remove the two screws and then remove the Case.

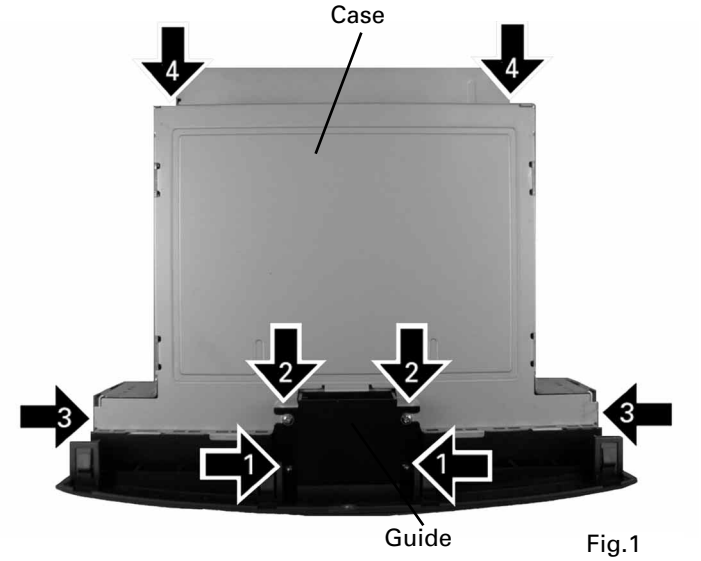


Fig.1

● **Removing the Grille Assy (Fig.2)**

1 Remove the two screws and then remove the Grille Assy.

● **Removing the Cassette Mechanism Module (Fig.2)**

2 Remove the four screws and then remove the Cassette Mechanism Module.

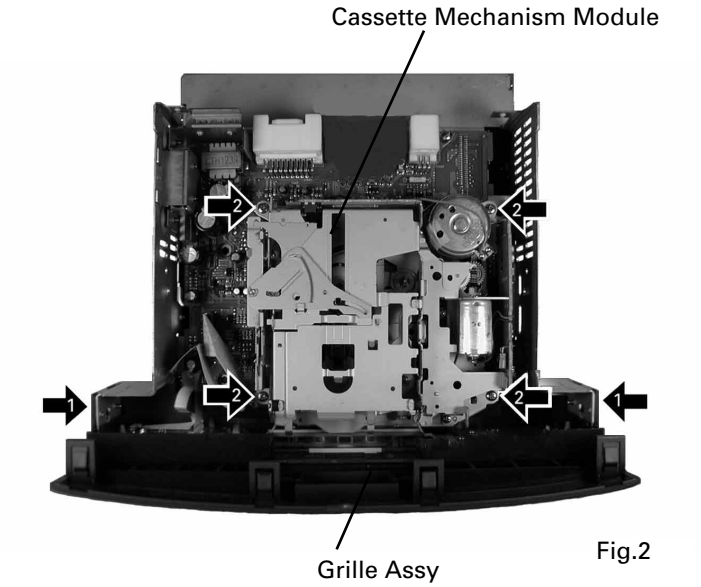


Fig.2

● **Removing the Main Unit (Fig.3)**

1 Remove the two screws.

2 Straighten the tabs at five locations indicated.

3 Remove the screw and then remove the Main Unit.

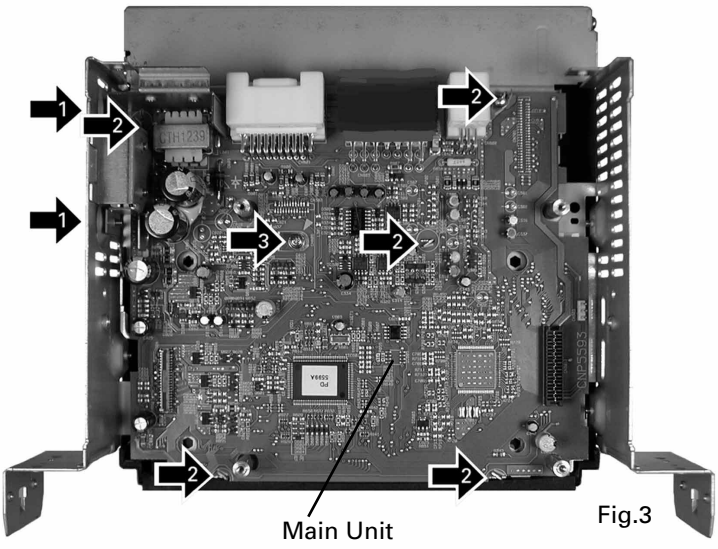


Fig.3

● **Removing the Chassis Unit (Fig.4)**

1 Remove the seven screws and then remove the Chassis Unit.

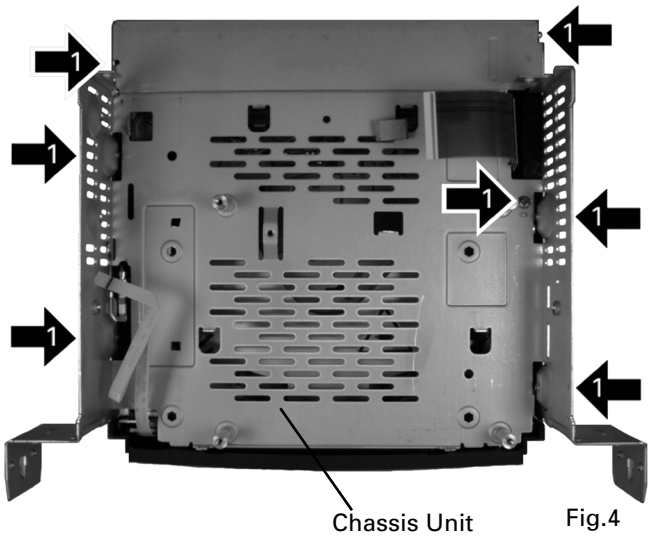


Fig.4

● **Removing the Mechanism Assy (Fig.5)**

1. Disconnect the Connector.
2. Remove the three screws A, and then remove the Holder and Damper.
3. Remove the two screws B, and then remove the Holder and Damper.
4. Remove the two springs C, the spring D and the spring E and then remove the Mechanism Assy.

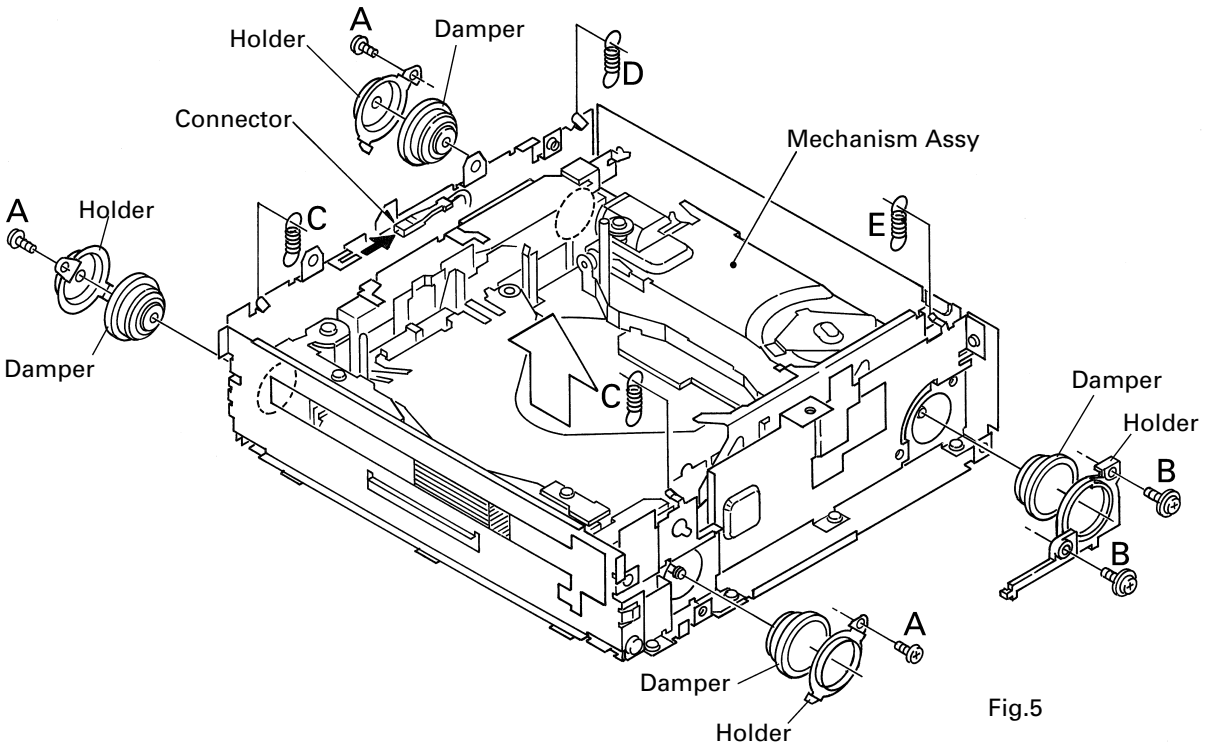


Fig.5

● **How to remove the Tray Assy**

1. Apply about 6V current to the Cam gear motor until all holes match at the position (A) (elevation OK position).
2. Hook the three springs B temporarily as shown in Fig. 5. While pushing the Tray holder lock arms (right and left) in the direction (C), remove the Tray holder.

3. Lift up the Tray assy to remove it.

* Be careful not to remove the Tray hooks from the Tray assy.

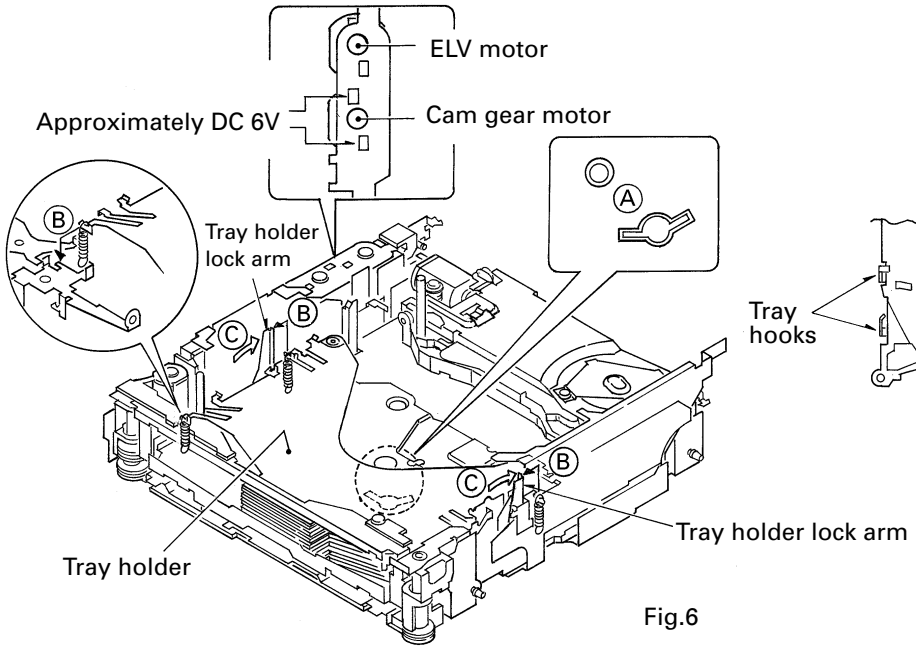


Fig.6

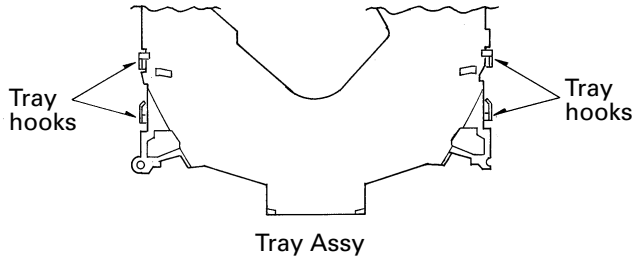


Fig. 7

● **How to remove the Carriage Mech Assy**

1. Insert a short pin into the flexible PCB of the Pickup unit.
2. While opening the resin hooks, remove the cover from the Servo unit.
3. Disconnect the flexible PCBs from the connectors CN101 and CN301.
4. Remove the Tray holder and the Tray assy. (See above)
5. Rotate the Cam gear motor until the positions of all holes (E) match, then stop the motor.
   (The Carriage Mech assy will stop as shown in the Fig.8.)
   * When the positions of all holes match, they will be completely covered by the Carriage mech assy.
   * To rotate the Cam Gear motor, see "How to remove the Tray assy".
6. Unhook the spring A.
7. Remove the flexible holder B (while opening the hooks).
8. Remove the flexible PCB (C) from the motor. (The flexible PCB (C) has been stuck on the motor with double-sided adhesive tape.)
9. Loosen the fixing screw and remove the flexible holder.

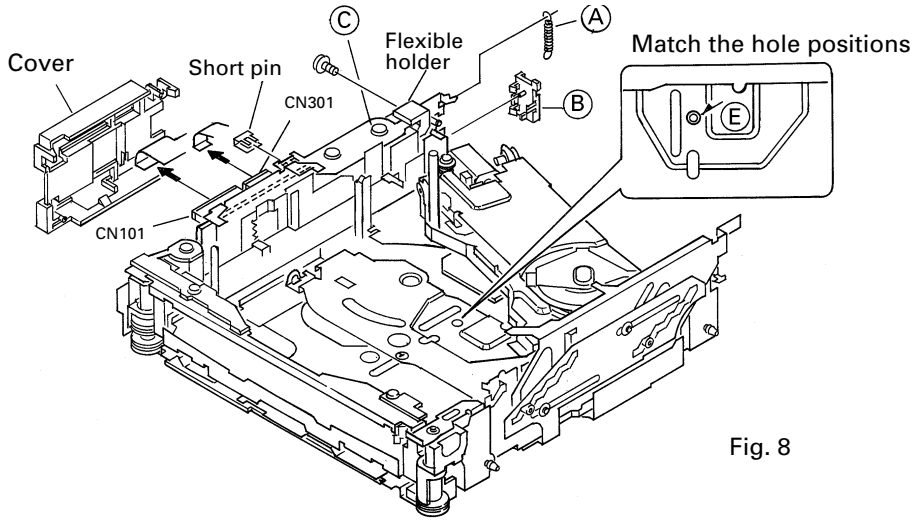


Fig. 8

10. Remove the screw, pressure spring and collar. Lift up the Carriage mechanism assy to remove it.
    * Screw tightening torque: 2.6kgfcm

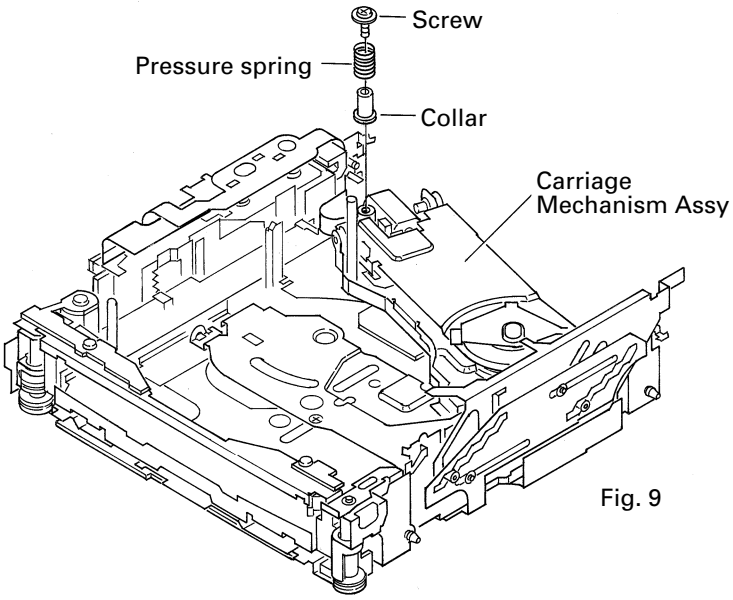


Fig. 9

● **How to remove the Pickup unit**

1. Remove the pulling spring, torsion spring and E-shaped ring. Then remove the Clamper arm.

* The spring (A) will be removed with the Clamper arm.

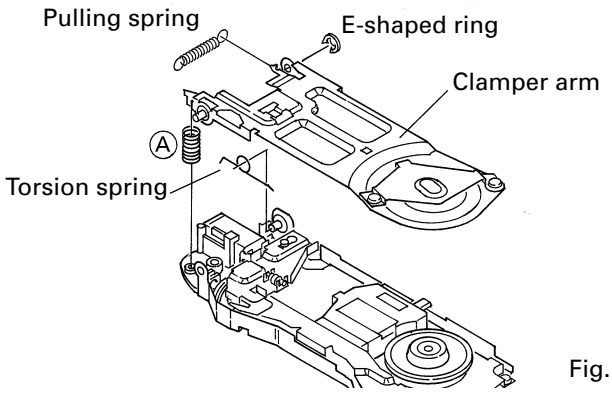


Fig. 10

2. Slide the Clamp UP lever (B) to remove it.
3. Loosen the 2 screws. Remove the feed-screw cover by sliding it.
4. Remove the feed-screw pressure spring (D).
5. Loosen the 2 screws. Remove the feed-screw holder (E).
6. Remove the belt.
7. Remove the Pickup unit together with the feed screw.

* Be careful not to lose the shaft holders at the both ends of the feed screw.

* Be careful not to damage the 2 flexible PCBs(for the Pickup and motor) when separating them. The flexible PCBs have been stuck each other with double-sided adhesive tape.

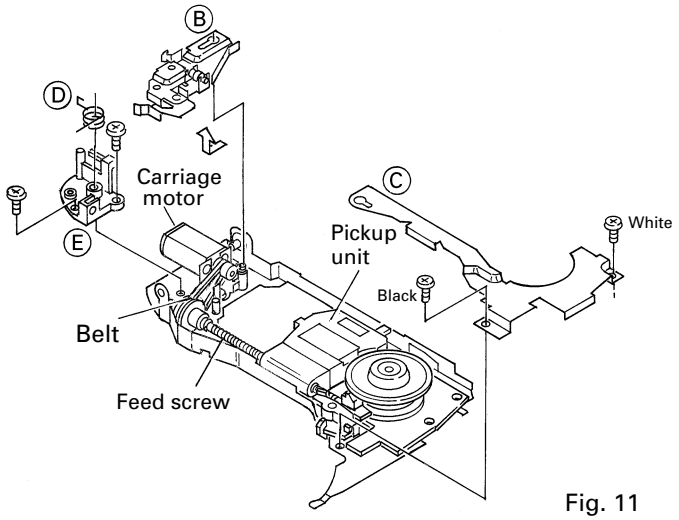


Fig. 11

8. Loosen the 2 screws. Remove the plate spring and the rack.
9. Pull out the feed screw from the Pickup unit.

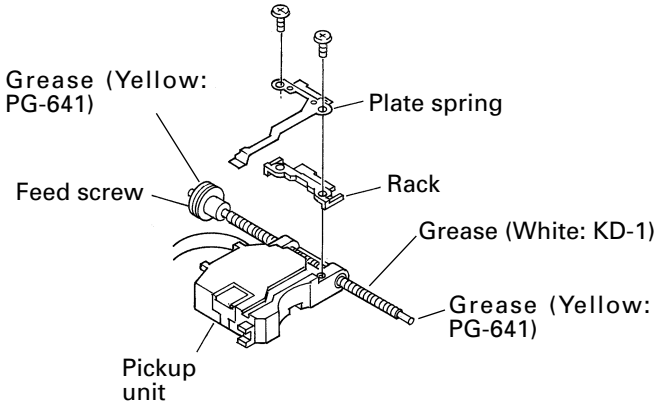
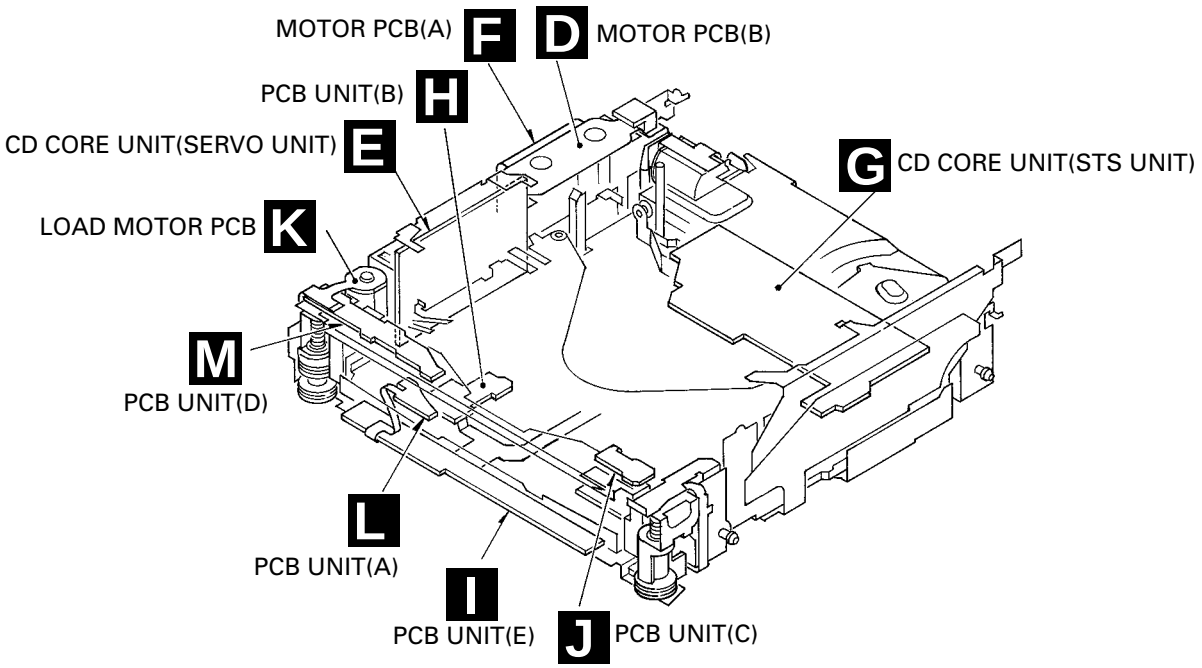
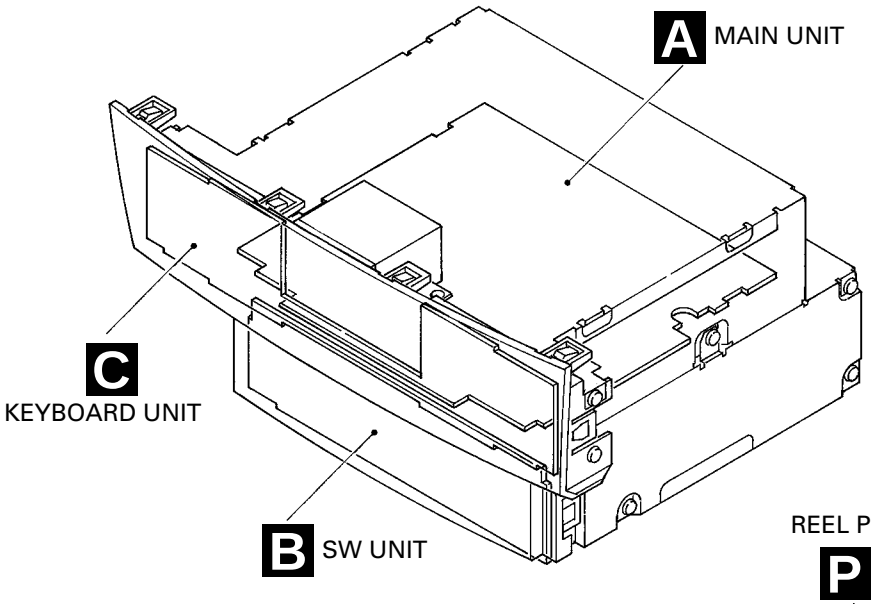
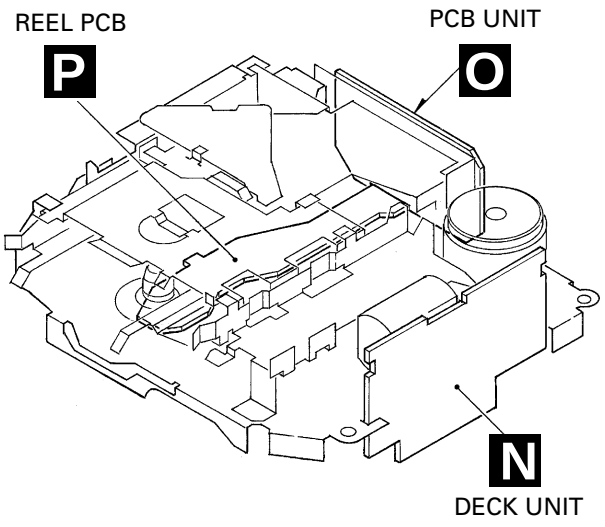


Fig. 12

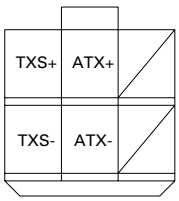
7.1.4 PCB LOCATIONS

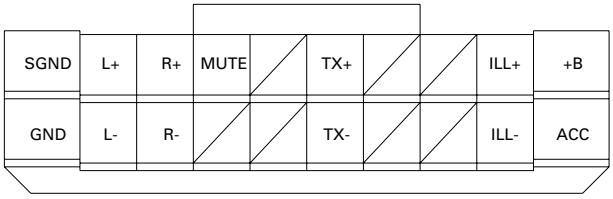


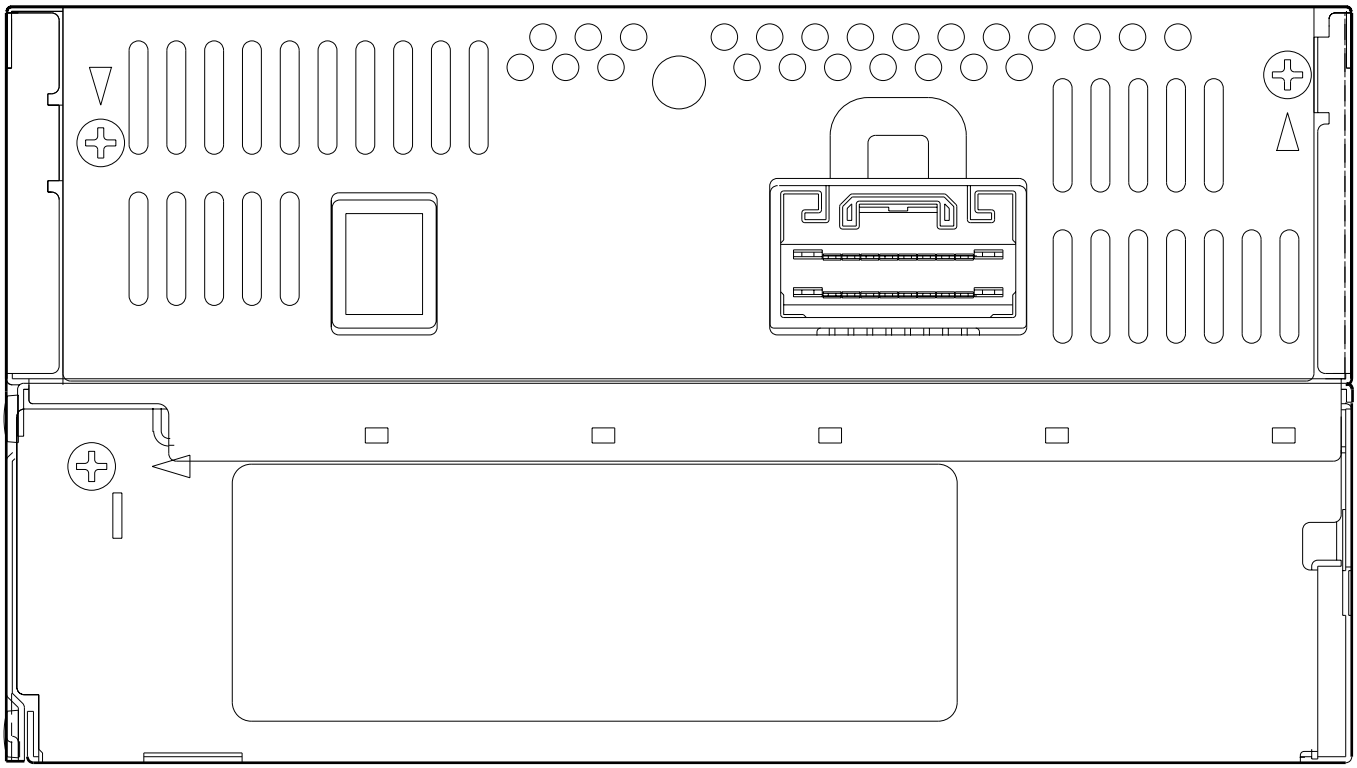




7.1.5 CONNECTOR FUNCTION DESCRIPTION







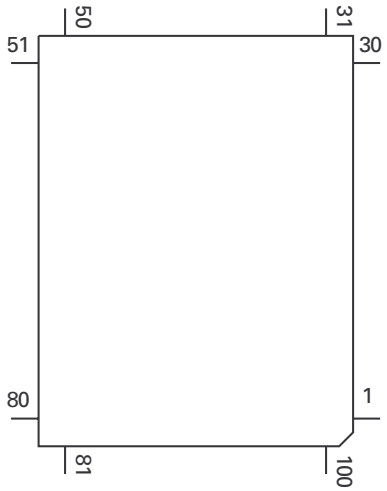
7.2 IC

● **Pin Functions (PD5556B)**

Pin No.	Pin Name	I/O	Function and Operation
1	LOFF	O	LCD driver OFF output
2	ECE	O	Chip enable output for EEPROM
3	BLIGHT	O	Back Light ON/OFF output
4	ILL	O	LAMP power supply control
5	LDO	O	LCD driver data output
6	NC		Not used
7	LCK	O	Clock output for LCD driver
8	BYTE		VCC joint
9	CNVSS		VSS joint
10,11	NC		Not used
12	$\overline{\text{RESET}}$	I	Reset input
13	XOUT	O	Crystal oscillating element connection pin
14	VSS		GND
15	XIN	I	Crystal oscillating element connection pin
16	VDD		Power supply
17	$\overline{\text{NHI}}$		VDD joint
18	$\overline{\text{DLOAD}}$	I	CD load key input
19	$\overline{\text{ASENS}}$	I	ACC power sense input
20	$\overline{\text{BSENS}}$	I	Back up power sense input
21	RX2	I	IE-BUS data input
22	IPPW	O	IP-BUS driver power supply output
23	$\overline{\text{ILSENS}}$	I	Illumination sense input
24	LCE1	O	Chip enable output pin for LCD driver
25	VDSEL		GND
26,27	NC		Not used
28	BLIGHT	O	Back Light ON/OFF output
29	RX1	I	IE-BUS data input
30	TX	O	IE-BUS data output
31	BSO	O	P-BUS serial data output
32	BSI	I	P-BUS serial data input
33	BSCK	O	P-BUS clock output
34	NC		Not used
35	BRXEN	I/O	P-BUS reception enable input/output
36	$\overline{\text{BRST}}$	I	P-BUS reset input
37	$\overline{\text{BSRQ}}$	O	P-BUS service request output
38,39	NC		Not used
40	LRST	O	LCD driver reset output
41	EPM		Not used
42–44	NC		Not used
45	$\overline{\text{SWVDD}}$	O	Display microcomputer power supply output
46	CE		Not used
47	$\overline{\text{SYSMUTE}}$	O	System mute output
48	ANSW	O	Analog SW output
49	CDILL	O	CD illumination output
50	TAPEMUTE	O	Tape mute output
51	MUTE	O	BUS mute output
52	$\overline{\text{ILLPOW}}$	O	Illumination power supply output
53	$\overline{\text{DSSILL}}$	O	DSS illumination output
54	$\overline{\text{MODE}}$	I	AUDIO mode key input
55	ENC1+	I	Encoder 1 (+) input
56	ENC1-	I	Encoder 1 (-) input
57	KD0	I	Key return input
58	KD1	I	Key return input
59	KD2	I	Key return input
60	KD3	I	Key return input
61	$\overline{\text{KST5}}$	O	Key strobe output
62	VCC		Power supply

Pin No.	Pin Name	I/O	Function and Operation
63	$\overline{KST4}$	O	Key strobe output
64	VSS		GND
65	KST3	O	Key strobe output
66	$\overline{KST2}$	O	Key strobe output
67	$\overline{KST1}$	O	Key strobe output
68	$\overline{KST0}$	O	Key strobe output
69	MS	I	Music sense input
70	$\overline{FR}$	O	Head forward/reverse select output
71	PLAY	O	MS gain select output
72	$\overline{MTL}$	I	Cassette mechanism tape select input
73	$\overline{CDEJ}$	I	CD eject key sense input
74	$\overline{MDEJ}$	I	MD eject key sense input
75	$\overline{CSEJ}$	I	Tape eject key sense input
76	NR	O	Dolby NR ON/OFF select output
77	CSLOAD	I	Tape loading detect input
78	POS	I	Cassette mechanism position sense input
79	RES	I	Cassette mechanism reverse end sense input
80	NES	I	Cassette mechanism forward end sense input
81	TEST	I	Test mode input
82	SC2	O	Cassette mechanism sub motor control output
83	SC1	O	Cassette mechanism sub motor control output
84	CM	O	Cassette mechanism capstan motor control output
85	$\overline{STBY}$	O	Stand-by output
86	ENC2-	I	Encoder 2 (-) input
87	ENC2+	I	Encoder 2 (+) input
88	$\overline{POWER}$	I	POWER key input
89	BASS	I	A/D converter input from BASS volume (not used)
90	TRE	I	A/D converter input from TREBLE volume (not used)
91	MID	I	A/D converter input from MID volume (not used)
92	FAD	I	A/D converter input from FADER volume (not used)
93	BAL	I	A/D converter input from BALANCE volume (not used)
94	ILL-	I	Rheostat signal input
95	NC		Not used
96	AVSS		A/D GND
97	ANO		GND
98	VREF	I	A/D converter reference voltage input
99	AVCC		A/D VCC
100	EDI	I	Data input from EEPROM

*PD5556B



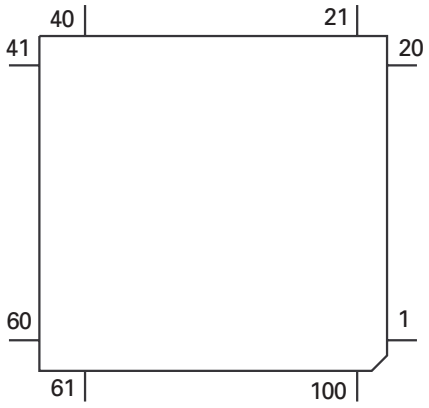
IC's marked by* are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

● **Pin Functions (PD5575B)**

Pin No.	Pin Name	I/O	Format	Function and Operation
1	VDIN	I		Power supply short sensor input
2	$\overline{\text{DOORSW}}$	I		Door open position SW input
3	NC			Not used
4	$\overline{\text{BSRQ}}$	O	C	P-BUS service request output
5	$\overline{\text{CLAMP}}$	I		DISC clamp SW input
6	$\overline{\text{ELHOME}}$	I		ELV reset position SW input
7	XSCK	O	C	CD LSI clock output
8	XSO	O	C	CD LSI data output
9	XSI	I		CD LSI data input
10	$\overline{\text{XSTB}}$	O	C	CD LSI strobe output
11	$\overline{\text{XRST}}$	O	C	CD LSI reset output
12	XA0	O	C	Control signal distinguishing data from microcomputer
13	VDCONT	O	C	VD control output
14	NC			Not used
15	$\overline{\text{BSENS}}$	I		Back up power sense input
16	BRXEN	I/O	C	P-BUS reception enable input/output
17	$\overline{\text{LOADSW}}$	I		Loading position SW input
18	$\overline{\text{MODESW}}$	I		ELV OK position SW input
19	BSCK	I/O	C	P-BUS serial clock input/output
20	BSO	O	C	P–BUS serial data output
21	BSI	I		P–BUS serial data input
22	$\overline{\text{BRST}}$	I		P–BUS reset input
23	SBSY	I		Signal indicating head of subcode block
24	CNVSS	I		GND
25	$\overline{\text{RESET}}$	I		Reset input
26	POWER	O	C	Servo/Mechanism power supply control output
27	CONT	O	C	Servo driver output control
28	Xin	I		Crystal oscillating element connection pin
29	Xout	O	C	Crystal oscillating element connection pin
30	VSS			GND
31–38	NC			Not used
39	TESTIN	I		Chip check program mode input
40	DCLOSE	I		Door close sense input
41	WDSL	O	C	Data comparison area specification signal output
42	XWIH	I		Data write inhibit input
43	XEMP	I		Data read inhibit input
44	CHDT	I		Data comparison mode monitor input
45	CHM0	O	C	Data comparison mode output 0
46	CHM1	O	C	Data comparison mode output 1
47–49	NC			Not used
50	XWRE	O	C	DRAM WRT ENBL
51	XRDE	O	C	DRAM READ ENBL
52	XQOK	O	C	SUB-Q OK output
53	EMPH	O	C	DAC emphasis output
54	SCONT	O	C	Mode select output
55	LOAD	O	C	PHOT power supply control
56	$\overline{\text{CDMUTE}}$	O	C	CD mute output
57	LO2	O	C	LOAD motor control terminal output 2
58	LO1	O	C	LOAD motor control terminal output 1
59	ELV2	O	C	ELV motor control terminal output 2
60	ELV1	O	C	ELV motor control terminal output 1
61	CG2	O	C	CAM motor control terminal output 2
62	CG1	O	C	CAM motor control terminal output 1
63	MIRR	I		CD LSI mirror detector input
64	LOCK	I		CD LSI spindle lock detector input
65	FOK	I		CD LSI FOK signal input
66–68	NC			Not used
69	$\overline{\text{ADENA}}$	O	C	A/D reference voltage output

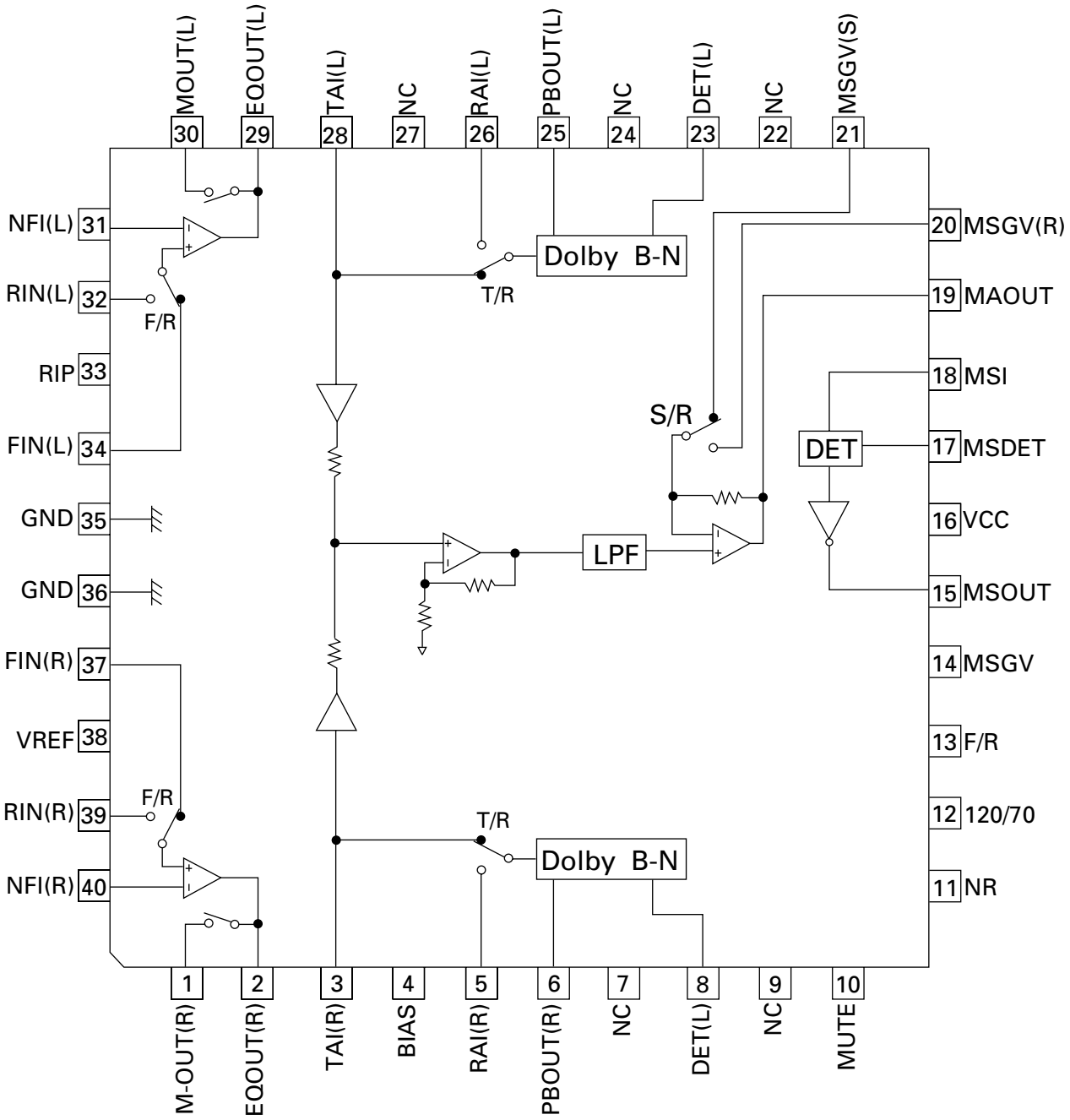
Pin No.	Pin Name	I/O	Format	Function and Operation
70	NC			Not used
71	VCC			VDD
72	VREF	I		A/D converter reference voltage input
73	AVSS			A/D GND
74	ADRMON	I		The remainder amount address monitor input
75	EREF			DRAM A/D reference voltage output
76	PH1	I		Disc photo sense input 1
77	PH2	I		Disc photo sense input 2
78	PH3	I		Disc photo sense input 3
79	ELVSNS	I		ELV position photo sense input
80	TEMP	I		Temperature detector input

*PD5575B



Format	Meaning
C	C MOS

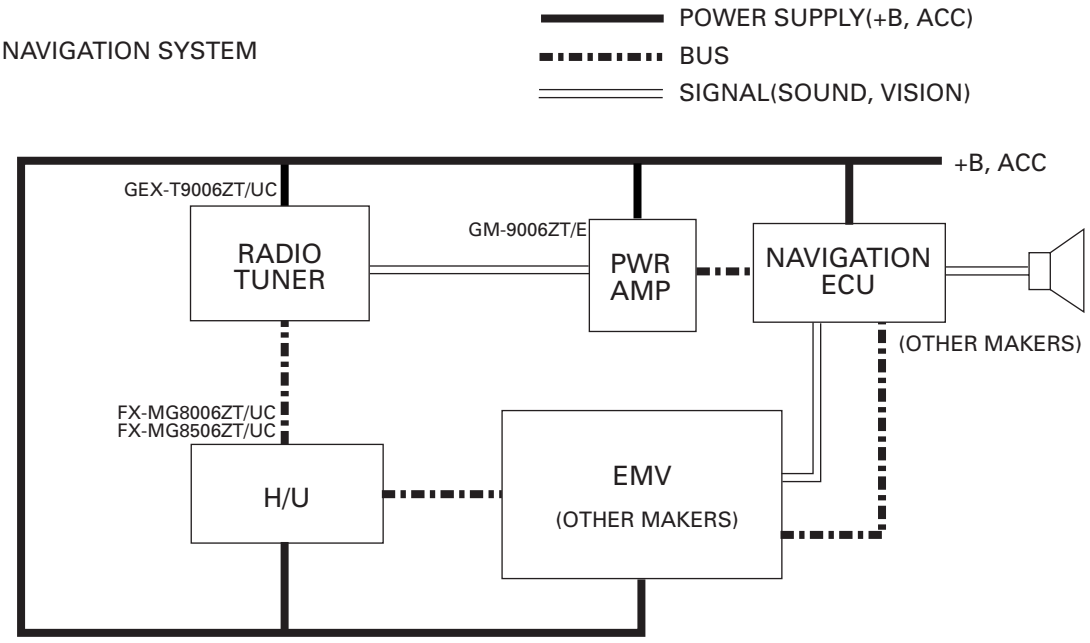
HA12216F


MOUT(L) 30
EQOUT(L) 29
TAI(L) 28
NC 27
RAI(L) 26
PBOUT(L) 25
NC 24
DET(L) 23
NC 22
MSGV(S) 21
NFI(L) 31
RIN(L) 32
RIP 33
FIN(L) 34
GND 35
GND 36
FIN(R) 37
VREF 38
RIN(R) 39
NFI(R) 40
F/R
T/R
Dolby B-N
S/R
DET
LPF
20 MSGV(R)
19 MAOUT
18 MSI
17 MSDET
16 VCC
15 MSOUT
14 MSGV
13 F/R
12 120/70
11 NR
1 M-OUT(R)
2 EQOUT(R)
3 TAI(R)
4 BIAS
5 RAI(R)
6 PBOUT(R)
7 NC
8 DET(L)
9 NC
10 MUTE

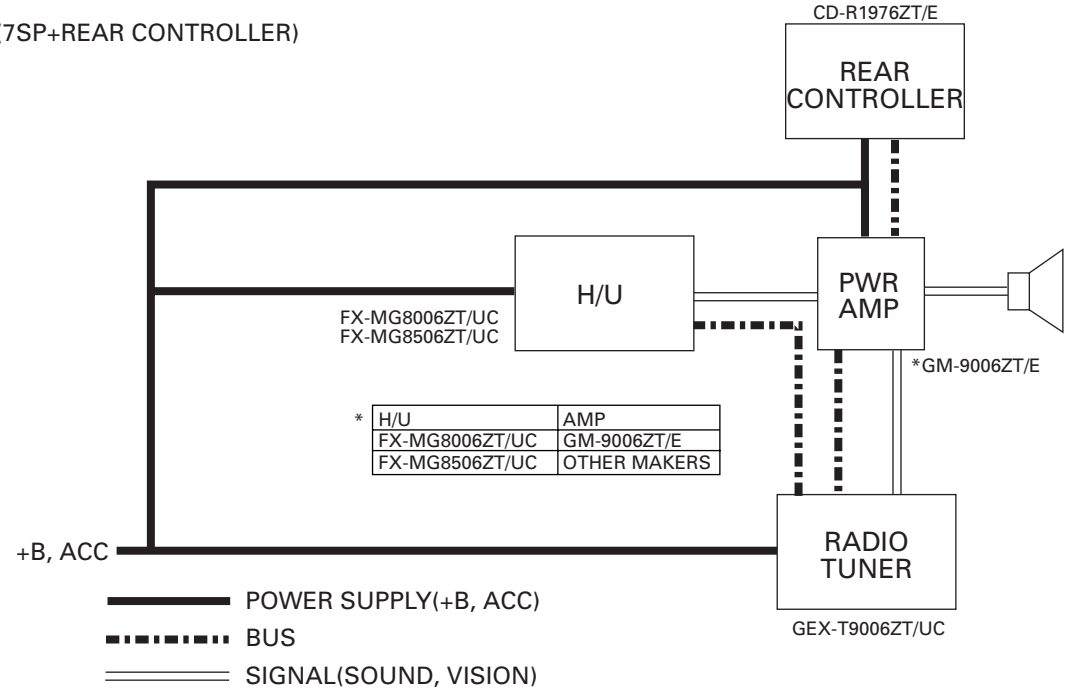
7.3 EXPLANATION

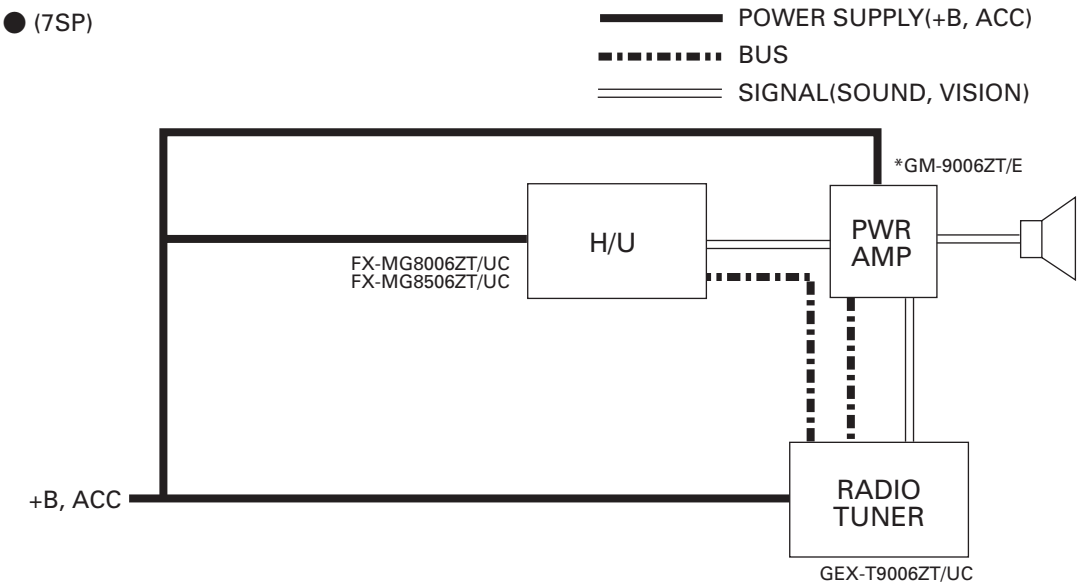
7.3.1 SYSTEM BLOCK DIAGRAM

● NAVIGATION SYSTEM

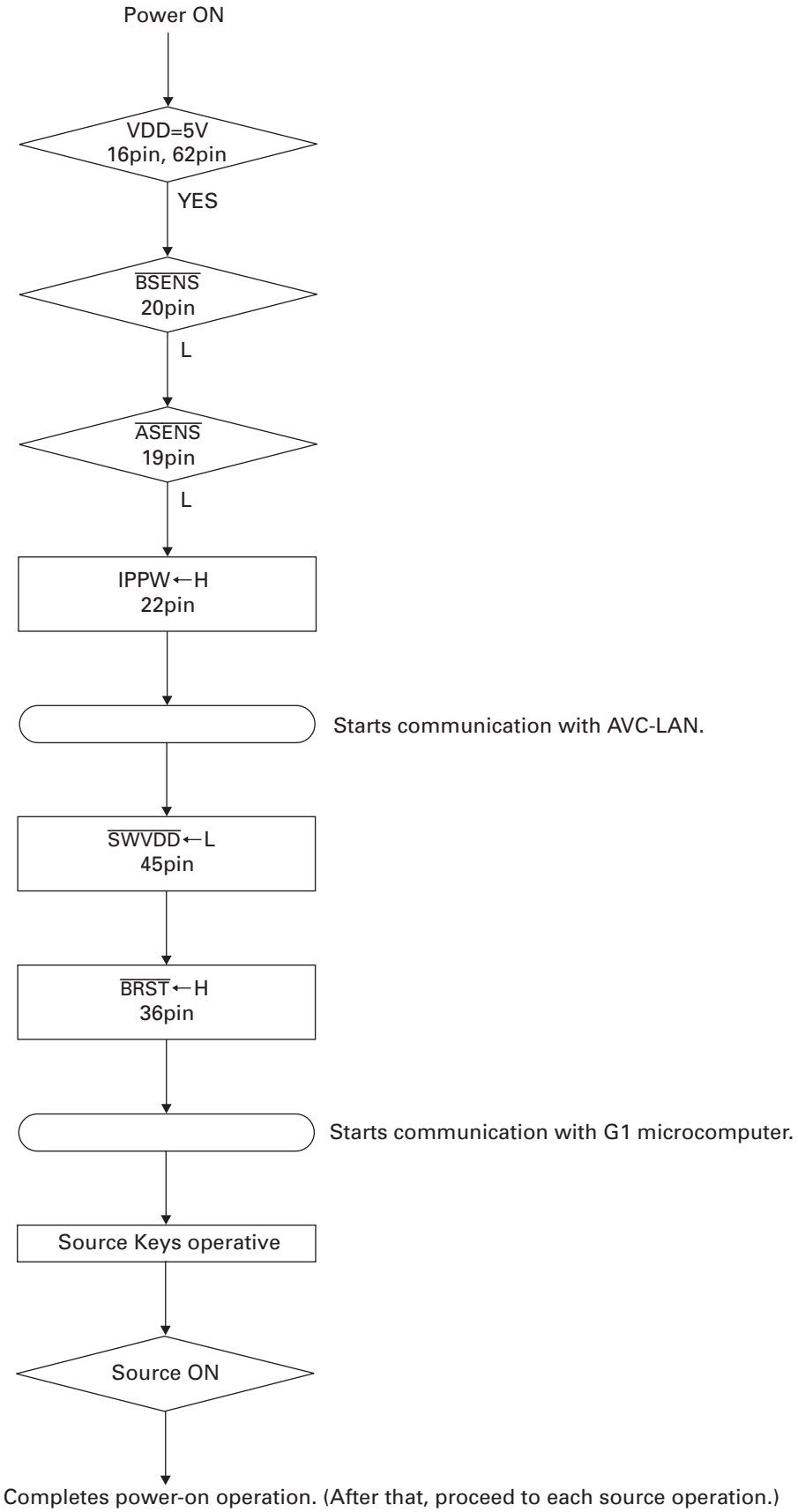


● (7SP+REAR CONTROLLER)




● (7SP)
POWER SUPPLY(+B, ACC)
BUS
SIGNAL(SOUND, VISION)
*GM-9006ZT/E
H/U
FX-MG8006ZT/UC
FX-MG8506ZT/UC
PWR
AMP
+B, ACC
RADIO
TUNER
GEX-T9006ZT/UC

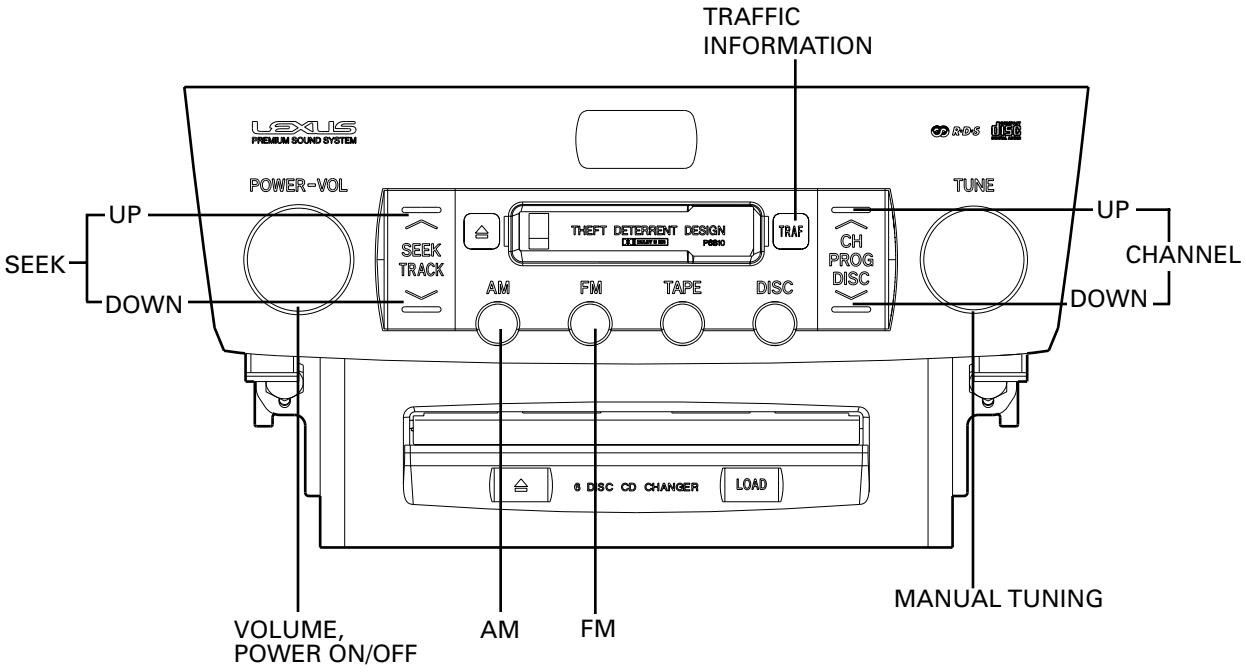
7.3.2 OPERATIONAL FLOW CHART



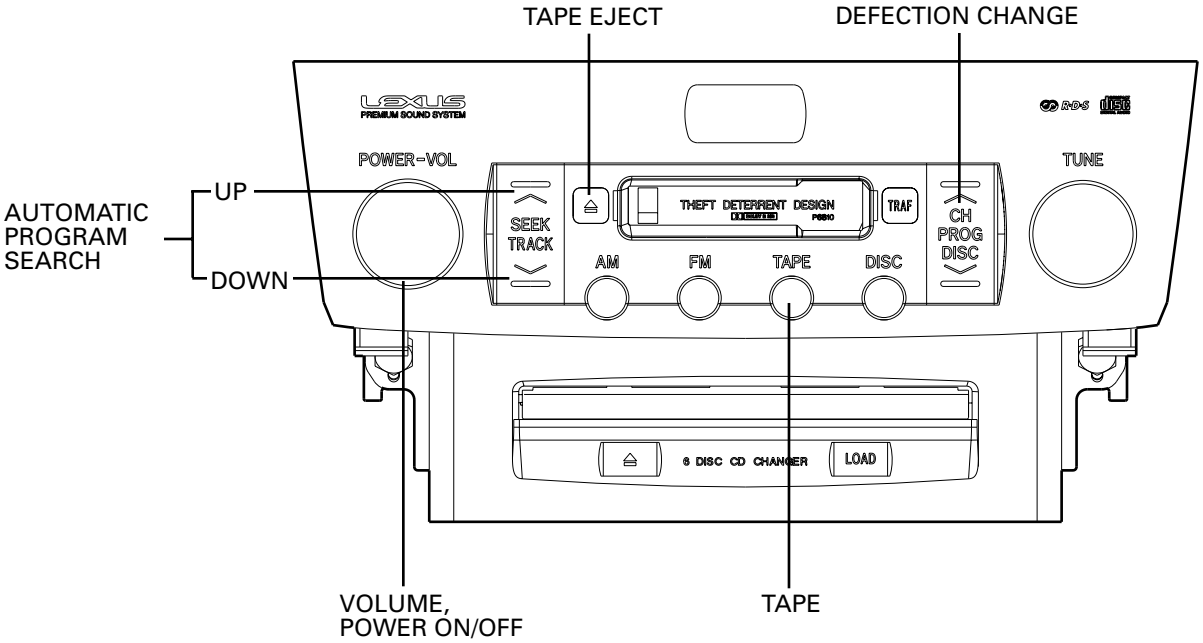
8. OPERATIONS AND SPECIFICATIONS

8.1 OPERATIONS

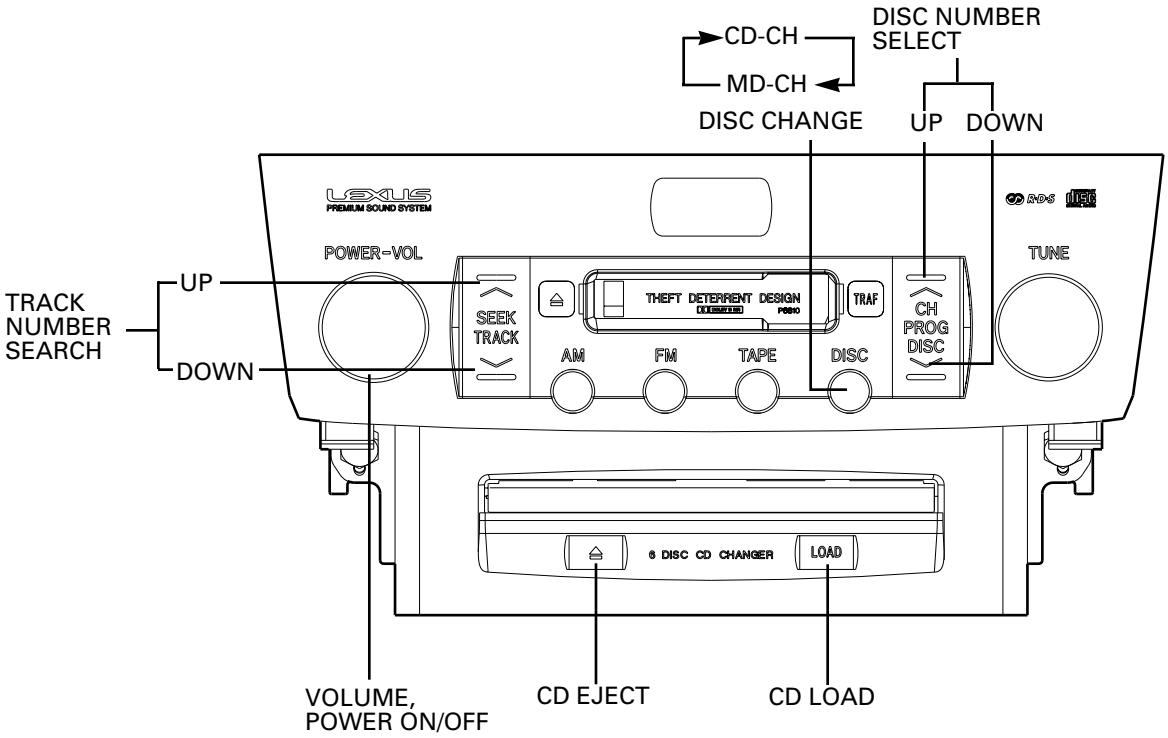
● **RADIO**



● **TAPE**



● **CD / MD**



8.2 SPECIFICATIONS

General

Power source.....13.2V(10.5V-16.0V allowable) DC
Grounding system.....Negative type
Electrode dark current.....2mA or less
Dimensions(Chassis).....178(W)x100(H)x166(D)mm
(Grille).....254(W)x129(H)x47(D)mm
Weight.....2.7kg

Cassette player

Tape.....Compact cassette tape(C30-C90)
Tape speed .....4.76 cm/sec.(+0.14 cm/sec.,-0.05 cm/sec.)
Wow and flutter.....0.2% or less(WRMS)
Crosstalk .....40dB or less
Stereo Separation.....30dB or more
S/N .....41dB or more
Distortion.....3% or less

CD player

System .....Compact disc audio system
Usable discs .....Compact disc
Signal format .....Sampling frequency : 44.1kHz
.....Number of guantization : 16;linear
S/N .....70dB or more
Distortion.....0.2% or less

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER EUROPE NV Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

© **PIONEER CORPORATION 2000**

K-ZZD. AUG. 2000 Printed in Japan